Milroy Lectures

ON

EPIDEMIC DISEASES OF THE CENTRAL NERVOUS SYSTEM.

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LECTURE I.*

I WOULD in the first place wish to thank the College for the honour they have conferred on me by their appointment to deliver the Milroy Lectures for 1925. I have taken as my subject the epidemic diseases of the central nervous system. It is one which accords with the intentions of the founder of these lectures, touching as it does upon a consideration of the part which contagion plays in the origination and spread of acute or pyrexial disease.

INCREASING SUSCEPTIBILITY OF THE CENTRAL NERVOUS SYSTEM TO ATTACKS OF EPIDEMIC DISEASE.

Acute poliomyelitis, encephalitis lethargica, and cerebro-spinal meningitis, from the very nature of the region of the body attacked, are of serious and grave import; cerebro-spinal meningitis, in view of its frequently fatal issue in the acute stage, poliomyelitis and encephalitis lethargica chiefly by reason of their disastrous after-effects.

Since 1897 epidemics of poliomyelitis have occurred in England and Wales, fortunately not to the extent to which they have been met with in America. The years of the war have familiarised us with severe outbreaks of cerebro-spinal meningitis on a scale of severity previously unknown in this country. In the last year of the war, 1918, encephalitis lethargica appeared in our midst as a recognisable disease, and has subsequently, in succeeding years, manifested itself in epidemic form (see table). As will afterwards be shown, there are grounds for belief that this increased incidence of epidemic nervous diseases is associated with an increased susceptibility on the part of nervous tissue in certain individuals to these diseases.

ENGLAND AND WALES.—*Table Showing Notifications and Deaths of Civilians from Cerebro-spinal Fever (C.S.F.), Poliomyelitis (Pol.-my.), Polio-encephalitis (Pol.-enc.), and Encephalitis Lethargica (Enc. leth.) since These Diseases Became Generally Notifiable.*

Year.	C.S.F.		Pol.-my.		Pol.-enc.		Enc. leth.	
	Ca.	De.	Ca.	De.	Ca.	De.	Ca.	De.
1913	305	—	729	206	—	—	—	—
1914	315	—	509	177	—	—	—	—
1915	2566	1593	517	172	—	—	—	—
1916	1306	918	589	190	—	—	—	—
1917	1465	1013	357	168	—	—	—	—
1918	798	612	228	231	—	—	—	—
1919	848	619	553	181	62	—*	541	264
1920	583	531	293	133	36	—*	890	471
1921	411	414	488	129	51	40	1470	724
1922	344	360	355	109	31	27	454	337
1923	301	281	587	79	57	40	1025	530

Ca. = Cases. De. = Deaths.
* Included under poliomyelitis.

To what causes are we to attribute this increased and rapidly increasing susceptibility of the central nervous system to attacks of epidemic disease? It will be found that no decisive answer that would accord with the prevailing trend of epidemiological inquiry can be given to this interrogation at the present time. It will not be unprofitable, nevertheless, to give some attention to the possible explanations, not necessarily incompatible, that may be advanced upon the subject.

(1) The first view may be described as the *Communication Theory.* Modern methods of transportation bring individuals in contact with one another more frequently than has been the case in the past, and so increase the facilities for the spread of epidemic infection. Infection may thus travel with the speed of modern transport from one country to another or from one part of the same country to another. The increase of large towns, the tendency of urban populations to assemble in crowded gatherings enhance the opportunities for personal infection, and a disease which in the eighteenth and nineteenth centuries might have been sporadic or endemic is rendered epidemic or pandemic in the twentieth century.

There is much substance in this view as regards increase of opportunity for infection. The transportation of troops to and fro in all parts of the world during the war undoubtedly favoured epidemics of influenza and cerebro-spinal meningitis. At the same time it will be recalled that both cerebro-spinal fever and poliomyelitis had been increasing in frequency and assuming epidemic form prior to the war, while the increase in encephalitis lethargica subsequently to those years possibly implies an increasing susceptibility of nervous tissues to infection. Modern methods of communication, therefore, cannot supply the whole explanation.

(2) *Epidemic Cycles.*—It may be suggested that these diseases of the nervous system occur from time to time in epidemic cycles, and that at present such an epidemic wheel is turning full circle among mankind. It is well established in the case of the acute zymotic diseases that such epidemic cycles occur.

Hirsch,[1] in tracing the history of epidemics of cerebro-spinal meningitis has shown that the disease occurs in epidemic waves or periods. In this respect it resembles the periodicity of influenza, but, owing to its much lesser morbidity, it exercises less devastating effects on populations, advances much more slowly, and in periods of epidemic prevalence its distribution is less world-wide than influenza. Unfortunately, the rapidity of modern transport and more frequent international communication appear to be modifying this latter feature of cerebro-spinal fever, as may be seen from the many countries affected in the recent epidemic period.

The recurrence of these epidemic waves of cerebro-spinal fever is irregular. Our best information on this point comes from the United States, where epidemics have been recurring since 1808, some of them on a large scale. The figures of incidence of cerebro-spinal meningitis in non-epidemic periods indicate, as for influenza and measles, that the approach of an epidemic wave of cerebro-spinal fever is signalled by an increase in the number of cases; a similar increase in sporadic cases is seen in the wake of an epidemic. In endemic centres of the disease the advent of an epidemic can be anticipated by noting the rising increase of cases in the notification returns. It may be the case that poliomyelitis and encephalitis lethargica behave epidemiologically like their sister disease and from time to time appear in epidemic periods. If so, we may be under the hand of a heavy epidemic visitation. We have no authentic records of previous epidemic cycles of poliomyelitis and encephalitis lethargica; possibly, as regards these two diseases, we are still in the shadow of their first epidemic periods. In each disease it is established that the *materies morbi* is always present in affected countries. For the initiation of an epidemic wave it may be surmised that several factors come into play from time to time, which, either by increasing the virulence of the causal

* Lectures II. and III. will be published in subsequent issues of THE LANCET.

virus or by lowering the defensive forces of the human organism, or by the exercise of both influences, bring about an epidemic.

(3) "*Epidemic Constitution*" *of Influenza.*—More comprehensive than the last hypothesis, but in some respects allied to it, is the view of those who would group influenza, cerebro-spinal fever, poliomyelitis, and encephalitis lethargica as arising from some common condition. This view has been succinctly summed up in the following terms[3]:—

Various epidemiological records go far to establish: (*a*) that the epidemiological features of the cycle of years within which influenza explodes are different from those of the influenza-free cycles; (*b*) that preceding epidemic influenza there is often a rise in general morbidity of the population, an "epidemic constitution" develops favourable to influenza, there are early though often mild and atypical clinical forerunners of the disease, and parallel or allied clinical maladies are seen; and lastly (*c*) that there are concurrences, similarities, and inter-relationships between outbreaks of cerebro-spinal fever, poliomyelitis, and outbreaks of influenza, bronchitis, and pneumonia.

The term "epidemic constitution" is admittedly vague, and the evidence is conflicting with regard to the favouring part played by influenza in the ætiology of epidemic nervous disease. In the first place influenza, in the absence of identification of the causal organism, defies definition. The authorities who have had most clinical experience in regard to epidemic diseases of the central nervous system fail to recognise an association between them and influenza.

Many cases of epidemic poliomyelitis and encephalitis lethargica are mistaken for influenza in the first instance through failure to diagnose the prodromal stages of these maladies. Until we know more of the ætiology of influenza, and until the concept of an epidemic constitution favouring the occurrence of epidemic nervous diseases can be demonstrated more clearly, it seems well to regard cerebro-spinal meningitis, poliomyelitis, and encephalitis lethargica as distinct and separate diseases, and unwise to assume that all cases of disease occurring in the course of a widespread epidemic are necessarily an integral part of the epidemic. If in doing so the epidemiologist is sinning against the light he can at all events plead that the light should be made more luminous.

(4) *Soil and Seed in Epidemic Nervous Disease.*—In another view which I venture to bring before you consideration is given both to influences at the present time reacting on the central nervous system in man, and to the possibilities of an origin of new species of organisms which can give rise to epidemic nervous disease. On this hypothesis, which is not exclusive of the views already considered, there are two factors involved, the special susceptibility of the region of the body attacked and the neo-parasitic nature of the virus of the disease attacking, or to use a hackneyed metaphor, both the soil and the seed play their part. The central nervous system of man is harnessed willy-nilly to the chariot of modern progress; it is made to work not necessarily more efficiently, but at a more rapid pace; it is exposed day by day to demands upon its attention, claims on its vitality, and shocks and vicissitudes which the nervous systems of our forefathers never knew, and which we in our childhood barely envisaged. We are now able to travel distances at speeds which the past would regard as magical. This Ariel-like facility of motion and of concentrating our labours of necessity causes increased strain on the nervous system. In towns the retina is always fatigued by coloured posters and moving vehicles by day, and at night by electric light and changing light signs. The world gets through an increased amount of work in the shortest possible time; but the penalty is paid in "nervous breakdowns," neurasthenia, and other manifestations of nervous fatigue to which the dwellers in the pastoral age were strangers.

It is a truism of medicine that a disease is prone to attack an individual at the weakest or most fatigued point of bodily resistance. To this rule the central nervous system is no exception. Nissl found that marked changes, indicated principally by disintegration of the chromatin granules, occur in the body of every nerve-cell after severance of its axis-cylinder. In the case of a child of 6 years suffering from poliomyelitis, seen by me during the course of an epidemic of this disease in 1917, the patient had fractured the left forearm two months previous to the onset of poliomyelitis. The muscles paralysed were those of the injured arm. Possibly, by a process of ascending degeneration from the nerves involved in the traumatic injury, the anterior horn cells innervating the muscles of the left forearm were injuriously affected, and the virus of poliomyelitis subsequently attacked the anterior cornua at their most vulnerable point. Similarly, we may postulate that fatigued or over-worked tissues of the central nervous system are thereby rendered more susceptible to the attacks of invading organisms. The pioneer work of Hughlings Jackson had already begun as far back as 1870 to point out that study of the individual patient comes before the study of the disease, for a disease is rarely typical, but is modified by the characteristics of the patient. The environmental conditions under which the human nervous system functions to-day are modified; the system itself is subjected to more frequent and urgent stimuli than formerly. May not the soil thus be prepared to receive the seeds of disease?

In this connexion it is of interest to note that the outbreaks of encephalitis lethargica in Vienna, Paris, and this country first appeared at a time when individuals had been exposed to the mental strain of several years of war, and that the cases occurred then chiefly in large urban centres of population where such strain was likely to be more acutely felt.

The possible evolution of new organisms affecting the human central nervous system is the second and most important factor in the hypothesis under discussion.

In speculating upon the possibility of the advent of the organisms of epidemic nervous disease this might have taken place in one of the following ways: (1) The organisms may have been in the first instance harmless parasites of man and in the struggle for existence have taken on inimical characteristics. (2) They may have been organisms causing catarrh of the naso-pharynx or gastro-intestinal tract which now tend to affect the brain and spinal cord. Captain S. R. Douglas, F.R.S., in a personal communication, draws attention to the fact that the organisms of poliomyelitis and of epidemic encephalitis are filtrable viruses, like those of the "common cold." The catarrhal forms of these diseases seen in the abortive or mild types afford some support for this view. (3) The organisms may resemble the pneumococcus in being widespread amongst human beings and capable, under certain conditions, of giving rise to autogenic infection. As regards cerebro-spinal fever, the bacteriological evidence is not in favour of this suggestion. (4) The organisms may have been saprophytes in nature but are now assuming the rôle of human parasites. For this hypothesis no evidence has as yet been forthcoming. (5) They may be epizoötic organisms which are becoming increasingly transmissible to man and afterwards from man to man. The evidence bearing upon this question is discussed subsequently. For any one of these possibilities a lowering in resistance of the defensive powers of the human nervous system would be an important contributory factor.

EPIDEMIC NERVOUS DISEASE IN ANIMALS.

The information in regard to similar epidemic diseases of the central nervous system in the lower animals is scanty, and there appears here to be a large *terra incognita* unexplored by the comparative pathologist. Considering first cerebro-spinal fever, Sophian[4] says that pure meningitis in domestic animals is uncommon, and that many of the so-called cases of meningitis are toxæmias in which spinal and cerebral symptoms occur.

The evidence for an epizootic form of poliomyelitis was equally indefinite until the outbreak described by Cleland and Campbell.[4] This was an epidemic form of encephalomyelitis which occurred in the late summers of 1917 and 1918 and was restricted almost entirely to certain dry inland parts of New South Wales. The disease affected human beings as well as horses, cattle, sheep, and goats. Breinl[5] regarded the disease as a clinically aberrant form of poliomyelitis in which the brain was extensively involved, and Flexner,[6] who had opportunities of examining post-mortem material from the outbreak, confirms this view.

In the investigation of encephalitis lethargica the possibility of a similar disease occurring in the lower animals has not been ignored. Parsons has placed on record a full account of the investigations made in this country on the subject. A number of alleged outbreaks of encephalitis lethargica[7] affecting dogs and cats, and in one instance farm horses, were inquired into, but on the whole the clinical signs displayed did not suggest encephalitis lethargica beyond being coincident in point of time with a high general incidence of that disease throughout the country. Much has been made of the recent discovery that spontaneous encephalitis due to protozoon-like parasites as described by Wright and Craighead[8] and Veratti and Sala,[9] occurs in rabbits, mice and geese.[10] McIntosh[11] has pointed out that the histology of this spontaneous encephalitis differs from that of encephalitis lethargica, whether occurring naturally in man or experimentally produced in animals, while the staining of the parasites in the spontaneous form supplies another point of differentiation.

There is, therefore, only evidence that poliomyelitis may affect simultaneously man and animals in epidemic form, as in the outbreak described by Cleland and Campbell. And in this outbreak the infection may have been transmitted from man to domestic animals. There is no substantial evidence for the suggestion that the increasing incidence of epidemic nervous disease is due to the transmission of epizootic organisms to man.

Cosmic Influences.—In considering the epidemiology of the three diseases it will be found that each one of them is subject to certain influences which it is customary to class together as causes predisposing to the disease. Overcrowding and lack of free ventilation in cerebro-spinal meningitis is a good example. In particular, all these diseases show an epidemic seasonal prevalence peculiar to each one of them. Cerebro-spinal fever prevails in the winter, encephalitis lethargica in the spring, and poliomyelitis in the late summer and early autumn. Sudden changes of temperature seem to be favourable to the meningococcus; continued hot weather, as in 1911, aids the spread of poliomyelitis. In the case of the latter disease it may be that our much maligned climate has saved us from epidemics of the magnitude seen in the United States.

It is established that the *materies morbi* of cerebro-spinal fever and of poliomyelitis and by analogy that of encephalitis lethargica also is always present in the upper respiratory passages of persons in affected countries in non-epidemic periods. The epidemiologists of the seventeenth and eighteenth centuries paid much attention to the part played by weather in promoting epidemics of disease. It may prove well in the future to follow in their footsteps, and to study more closely than has yet been done the influence of meteorological conditions in the initiation of epidemics of the central nervous system.

EPIDEMIC NATURE OF CERTAIN DISEASES OF THE CENTRAL NERVOUS SYSTEM.

It is within comparatively recent times that the epidemic nature of certain diseases of the central nervous system has been recognised, and in regard to two of them at all events—namely, poliomyelitis and encephalitis lethargica—this knowledge is far from widespread among medical practitioners. The reasons for this are possibly the impression of earlier teaching when nervous diseases were regarded as rare and exceptional and always due to a chronic process, a thrombosis or arterial affection or some other degenerative change giving rise to sclerosis of the nervous tissue, quite apart from any question of infectivity; the sporadic character assumed by types of epidemic nervous disease, and the failure to recognise mild and abortive forms as connected with the same disease, have occluded and still continue to mask the infective nature of many small outbreaks.

Cerebro-spinal Fever.

The senior disease of the triad on record is cerebro-spinal meningitis. This is first known to have occurred at Geneva in February, March, and April 1805; it caused the death of 33 persons, but, curiously enough, the Commission appointed by the Swiss Government were of opinion that there had not been enough cases to merit the name of epidemic.

In spite of many subsequent large outbreaks the contagious character of cerebro-spinal fever was largely ignored until the war period, when the disease became epidemic in this country and elsewhere, and was extensively studied and reported upon. In 1914 the findings as to infectivity of the disease published by Netter and Debré,[12] by Sophian[3] and others, had not, as now, become common knowledge. The Local Government Board made cerebro-spinal fever compulsorily notifiable throughout England and Wales in 1912, and thus far the epidemic and infectious nature of the disease was officially recognised.

Belief in its sporadic character was strengthened by the disconnected way in which the bulk of the cases occur in epidemics, by statistical evidence that only a relatively small proportion of those exposed to infection ever contract the disease, and that direct contagion from case to case is exceptional. On the other hand, a number of instances of direct infection are recorded by Reece[13] and others.

The secret of these apparent anomalies has been disclosed partly by the epidemiologist and clinician in recognising mild and abortive cases of cerebro-spinal fever, which at first sight bore no apparent relation to the cardinal nervous symptoms manifested by severe examples of the disease, but chiefly by the bacteriologists in their discovery of the healthy carriers of the meningococcus and of the various types of virulent and avirulent meningococci. The research work on the bacteriology and serology of cerebro-spinal fever organised by the Admiralty and the War Office with the invaluable coöperation of the Medical Research Council is beyond all praise, and the additions made to scientific knowledge will for ever remain on record as a testimony to the good that came out of the evil of war and disease.

Here I would especially mention the typing of meningococcic strains done by Gordon[14] and the valuable work of my colleague, Dr. J. A. Glover,[15] in relation to overcrowding, the carrier-rate and many other phases presented by cerebro-spinal fever. The President[16] in the Lumleian Lectures on Cerebro-Spinal Fever, delivered in 1919, has made so full an exposition of the subject which he has enriched by his own researches, that for many years to come writers on the same theme can but follow in his pioneer footsteps.

The apparent breaks and gaps in the chain of case-to-case infection in cerebro-spinal fever are due to several reasons. In the first place, the delicate characters of the meningococcus limit the opportunities for transference of the disease outside the human body. Secondly, while contacts of cases of cerebro-spinal fever are infected by the meningococcus, it does not of necessity follow that they develop the disease. They may possess enough powers of resistance to tide over the time of potential attack, so that the invading organism perishes in their nasal and oral passages without penetrating to the meninges: in this case the chain of infection is completely broken; or, as occurs

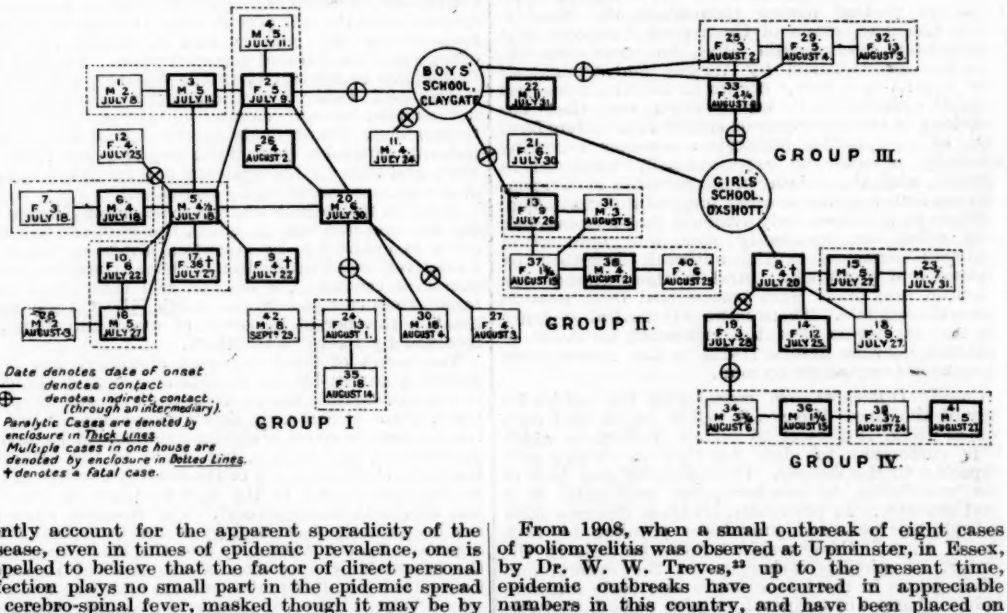
more commonly in epidemic periods, the contacts harbour the meningococcus for a greater or less length of time as transient or permanent carriers and transmit the infection to more susceptible individuals. A third possibility is that the contact develops the disease in a mild or slight form, the existence of which escapes recognition.

Glover [15] has made clear the important fact that a wave of high carrier-rates precedes and accompanies an outbreak of cerebro-spinal fever. In other words, there is a carrier epidemic (for the most part entirely devoid of symptoms) in advance of and in association with the much smaller case-epidemic. Whilst endorsing Arkwright's dictum, "the number of the carriers constitutes the epidemic," and accepting the commonly recognised views that individual lack of susceptibility and healthy carrier transmission sufficiently account for the apparent sporadicity of the disease, even in times of epidemic prevalence, one is impelled to believe that the factor of direct personal infection plays no small part in the epidemic spread of cerebro-spinal fever, masked though it may be by the failure to diagnose mild associated forms of the malady and by the rapidity of modern methods of transit. This factor is more clearly demonstrated when an epidemic of cerebro-spinal fever has lasted in a country for some length of time. Foster and Gaskell [17] adduced evidence of the disconnected way in which cerebro-spinal fever prevailed in England in 1914–15. Later on, however, Reece[13] pointed out that the general distribution of troops among whom the epidemic started, the greater number of which were stationed in the Eastern and South-Eastern parts of England, influenced the prevalence. The modern records indicate, therefore, that there is ample evidence for the recognition of cerebro-spinal fever as an infectious epidemic disease.

Acute Poliomyelitis.

Still later in point of time of recognition as an epidemic disease comes poliomyelitis. It was not until 1890 at the International Medical Congress, Berlin, that Medin,[18] a Swedish physician, described in some detail the epidemiological features of poliomyelitis, based on his study of 44 cases in the Stockholm epidemic of 1887, and suggested that the infection might be spread by mild or anomalous and unrecognised cases. Strümpell and Pierre Marie had previously recognised poliomyelitis as an infection, but to Medin belongs the credit of classifying poliomyelitis as an epidemic disease. Medin in his paper states that Bergenholz noted 13 cases occurring in the department of Norrbotten in 1881. Groups of cases of poliomyelitis were reported in Europe and in America from 1887 to 1897. W. Pasteur,[19] in 1897, described the first English epidemic, recording poliomyelitis in seven members of one family at Much Hadham, a small village in Hertfordshire. Hospital cases in London were collected and described by Dr. Thomas Buzzard [20] in 1898 and Dr. F. E. Batten[21] (1902–04). About this time the classical monograph on the subject was written by Ivor Wickman,[22] of Stockholm, the pupil and assistant of Medin, who made a thorough study of the epidemiology, and first recognised and described the so-called abortive or non-paralytic cases.

EPIDEMIC POLIOMYELITIS. DIAGRAMMATIC REPRESENTATION OF SPREAD OF INFECTION.


BOYS' SCHOOL, CLAYGATE
GIRLS' SCHOOL, OXSHOTT
GROUP I
GROUP II.
GROUP III.
GROUP IV.
Date denotes date of onset
denotes contact
denotes indirect contact (through an intermediary).
Paralytic Cases are denoted by enclosure in Thick Lines.
Multiple cases in one house are denoted by enclosure in Dotted Lines.
† denotes a fatal case.

From 1908, when a small outbreak of eight cases of poliomyelitis was observed at Upminster, in Essex, by Dr. W. W. Treves,[23] up to the present time, epidemic outbreaks have occurred in appreciable numbers in this country, and have been placed on record by Reece,[24] Farrar,[24] Macewen,[25] and others. All the large epidemics abroad, notably in America, began to impress the infectious character of the disease on the medical profession. Pathological investigations at this stage by Landsteiner and Popper,[26] by Flexner and Lewis [27] in New York, by Leiner and von Wiesner [28] in Vienna, and by Landsteiner and Levaditi[29] in Paris, supplemented the mass of epidemiological and clinical evidence assembled in regard to the infectious nature of poliomyelitis.

It is now well established that infection may be conveyed by (1) persons suffering from an acute typical attack of poliomyelitis; (2) individuals having a mild or atypical form of the malady; (3) healthy persons who have been in close contact with the sick but have not themselves developed an attack; and (4) chronic carriers who have apparently quite recovered from a previous typical attack. Infectivity in acute cases is greatest during the early stages of the malady.

The subjoined diagrammatic representation of the spread of infection relates to a small outbreak of acute poliomyelitis in Esher and the Dittons Urban District and Epsom Rural District, which I investigated for the Central Health Authority in 1917.[30]

It is interesting to note in this example in how many cases of poliomyelitis the possibility of infection by direct contact was demonstrated. Where this evidence is lacking the chain of infection appears to be maintained through the medium of a healthy carrier. Attention has already been called to this feature of epidemics of poliomyelitis. Müller[31] lays stress upon the fact that adults who have been in contact with infection may act as "carriers" of poliomyelitis and quotes illustrative examples. In the New York epidemic of 1916 the virus of poliomyelitis was recovered from apparently healthy persons who had been in contact with children ill of the disease.

Encephalitis Lethargica.

There remains now for consideration the infectious nature of encephalitis lethargica. In studying this question the epidemiological evidence already available in regard to cerebro-spinal fever and acute poliomyelitis greatly facilitated an understanding of the behaviour of encephalitis lethargica. No evidence has been elicited that the virus of this disease is conveyed through intermediate agencies, such as water, soil, food, clothing, biting insects and flies, &c. The question then arises as to the spread of the disease by personal contagion.

In the early days of the study the evidence as to case-infection was scanty. Bernard and Renault,[32] referring to the French Ministry of Hygiene's inquiry, state that out of 464 cases notified in 55 departments from January to May, 1920, there was no obvious case of contagion. Smith[33] in the United States, out of 181 cases, records a similar experience. In 1919, from the evidence already obtained, I inclined to the view that encephalitis lethargica was an epidemic and infectious disease[34]; the same opinion was early expressed by Netter.[35] In 1918 a few mild cases of the disease were noted, but no clear association between these and declared nervous forms of the disease was traced. Yet, even then, a considerable number of cases occurred in definite areas, such as Birmingham, Sheffield, and Tredegar, although apparently unrelated to one another, while in certain districts, as, for example, in the county borough of Stoke-upon-Trent, a restricted topographical distribution of the cases was observed.[36] More recently the tendency of encephalitis lethargica to be concentrated in its distribution in certain areas has also been observed in isolated agricultural districts. Dr. Dittmar, of the Scottish Board of Health, notes six cases of the disease in a rural part of Ross-shire arising during the years 1922 and 1923. As regards infection in utero or placental transmission, there are cases reported by Harris,[37] Kononowa,[38] Novaes and Sousa,[39] and others.

I have reported multiple cases of encephalitis lethargica in families which occurred at Mansfield in 1918, and at Eastbourne and Weybridge in 1919. Since 1919 I have collected notes of a number of additional examples of multiple cases of encephalitis lethargica in England and Wales, and other cases have been recorded from time to time in various parts of the world. An interesting example is that communicated by Van Boeckel[40]; at Ruddervoorde, in West Flanders, in 1919, where the disease attacked four families who were closely inter-related. Of 26 persons, 17 were attacked, and 4 of these died. Kling and Liljenquist,[41] of Stockholm, found, in February, 1921, that encephalitis lethargica was prevalent in certain villages in Lapland, the morbidity rate varying from 7·1 to 45·0 per cent. In some families several members contracted the disease simultaneously, and in two houses almost all the inhabitants were affected. Side by side with the severe and typical cases were catarrhal and febrile cases, cases with slight affection of the ocular movements, and a few cases of obstinate hiccup. Special attention has been devoted to this subject in France by Netter,[35] who records a number of multiple cases in households.

The most striking example of an institutional outbreak of encephalitis lethargica was investigated by me at Derby, England, in August, 1919.[42] In a home for girls an explosive outbreak of illness occurred affecting 12 persons (females) out of 22 persons (females) resident in the institution. The following were the dates of onset of the disease: Two patients were attacked on August 14th, 1919; two on the 15th; four on the 16th; two on the 17th; one on the 19th; and one on the 27th. No further cases of illness occurred after August 27th. The range of age-incidence was from 15 to 40 years; the stress of the disease fell on the lower ages (15–18 years).

It will be recalled that with a filtered emulsion of cerebral tissue from the first case Prof. McIntosh[43] succeeded in transmitting a fatal lethargic illness to a monkey, and on histological examination of the monkey's brain Prof. Turnbull found lesions identical with those of human cases of encephalitis lethargica. The clinical features of the Derby outbreak were so characteristic of encephalitis lethargica that from this aspect alone little doubt can be felt that one was dealing with cases of the disease. Furthermore, two of the girls that recovered from the acute illness have subsequently manifested the typical mental sequelæ of encephalitis lethargica. John and Stockebrand[44] have reported a similar outbreak in an asylum at Mulheim in the summer of 1922. Here 28 cases with 13 deaths occurred in 20 days, six being in nurses and two in doctors. Dysphagia and ophthalmoplegia were frequent symptoms.

The existence of these multiple cases and epidemic outbreaks in encephalitis lethargica would not necessarily imply that the disease is communicable from one person to another. The multiple cases might have been infected with the virus of the disease from a common source. But the following appears to be an undoubted example of personal contagion. A woman, aged 63, was attacked by encephalitis lethargica on Dec. 5th, 1918. She was removed to a nursing home on Dec. 17th. A nurse, aged 39, who took charge of the patient at night in the nursing home, fell ill with the same disease about Dec. 26th or 27th. Both patients recovered. Instances are also on record where a patient admitted to hospital for some other disease has acquired encephalitis lethargica, presumably from another patient who suffered from this disease and was in an adjoining bed. We are also aware of the existence of mild and ambulant cases of illness in association with declared cases of encephalitis lethargica; several instances of the kind were encountered during the considerable rise of incidence of the disease that occurred in 1924 in Liverpool, Sheffield, and elsewhere; through their medium the conveyance of infection; from one person to another seems to be more than probable.

The presence of these "carriers" in encephalitis lethargica indicates that the disease is in accord with cerebro-spinal fever and poliomyelitis as one in which the pathogenic agent is more frequently present in the human organism than the clinical evidence would imply. The work of Eastwood, F. Griffith and Scott,[45] &c., has already established this conception as true for cerebro-spinal fever. Also the cases first reported by S. A. Kinnier Wilson,[46] Parkes Weber,[47] Crouzon,[48] and others of symptomatic paralysis agitans following on an attack of encephalitis lethargica lead to the suggestion that certain cases of paralysis agitans in its chronic form may have their origin in an undetected attack of encephalitis lethargica, although Pierre Marie and Mlle. Lévy[49] and Cruchet oppose this view.

It is well not to disdain the study of the natural history of disease and the grouping of allied diseases. A considerable time elapsed before the infectious nature of cerebro-spinal fever and poliomyelitis was established. Recognising the similar features in these diseases to those of encephalitis lethargica and applying the knowledge we possess of them to the study of the latter disease, the conclusion seems to be justified, and is gaining universal

acceptance, that encephalitis lethargica is equally infective, and liable to manifestation in epidemic form.

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(*Continued at foot of next column.*)

Lettsomian Lectures

ON

WOUNDS AND OTHER INJURIES IN THEIR MEDICO-LEGAL ASPECT.

Delivered before the Medical Society of London

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LECTURE II.*

IN the last lecture I considered in some of its aspects the medico-legal problem presented by contusions, laying emphasis upon the rapid failure of the circulation after death and its bearing upon the post-mortem development of bruising. I then devoted some time to an analysis of crushing injuries of the chest and abdomen, pointing out how frequently serious internal injuries occur without any external manifestation. In the last part of the lecture injuries produced by firearms were described, with special reference to the means of distinguishing self-inflicted injuries from those produced by others.

Incised wounds are produced by weapons having a cutting edge which is drawn along or struck against the skin; similar injuries may be produced by objects having a sharp edge—for example, broken glass. An incised wound generally has a length greater than its depth, and retraction of its edges causes it to gape to a greater or less extent; the elasticity of the skin in part accounts for this, but the retraction of the divided muscles is the cause of the wide gaping of wounds which penetrate deeply. When examined shortly after infliction the skin and deeper structures are cleanly and smoothly divided; the margin is not bruised unless the weapon is blunt. Where the skin is lax the movement of the weapon, especially if it is blunt, may draw the skin along until it becomes folded. If the fold is incompletely divided intact skin will separate the two portions of the wound; if completely divided the skin margin will be notched. The blood-vessels are divided cleanly in an incised wound, blood escapes freely, and spurting from small arteries

* Lect. I. was published in THE LANCET last week. Lect. III. will appear in a subsequent issue.

(*Continued from previous column.*)

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produces characteristic rows of blood spots on surrounding objects.

Lacerated, in contrast with incised, wounds are produced by objects which tear the tissues, such as nails, machinery, hard projections, or the teeth of animals; they have ragged and generally contused margins and irregular bases, and the adjacent skin surface is often abraded. The roots of hairs which are in the line of the wound are not torn across but project from the edges of the tear. Blood-vessels are crushed as well as torn, and bleeding is generally less copious than in incised wounds, but if the wound should be situated in the vulva, where the tissues are very vascular and are readily torn or crushed, fatal hæmorrhage may result from a lacerated wound.

In one variety of lacerated wounds blood-vessels in the deeper part of the skin may escape injury to a large extent, forming bridges across the wound; these injuries will bleed even less freely, and are found in parts where the skin is immediately over bone; the majority of scalp wounds are of this nature and similar wounds are found along the orbital margins, on the shins, and over bony prominences. Violent contact with a hard, smooth surface produced by a fall or by a blow with a blunt weapon, crushes and splits the skin in the area of most marked compression against the bone. Such an injury, although it is clearly a lacerated wound, is often described as a cut.

Cut-throats form the most important group of incised wounds, a large proportion of dangerous incised wounds occurring in this region; they are almost always suicidal or homicidal.

The only example in my series of a fatal accident was in a drunken man who in falling drove his head through a pane of glass; he was found dead with three incised wounds on the right side of the head; they ran horizontally, the uppermost crossing the pinna and extending into the scalp, the middle situated just below the ear being 4 in. long and extending down to the spine, the third, a very superficial wound, being at a slightly lower level. No important blood-vessels were divided. A fall through glass often produces multiple wounds in the same direction, and the situation of these injuries is unlike that of suicidal or homicidal wounds.

A fatal case of suicidal cut-throat has generally only one deep wound in the upper part of the neck; beginning on the left side, it may be far back, it extends across the front and in some cases to the right side of the neck; it is straight or only slightly curved, has a slight downward inclination and crosses the front of the neck at or above the level of the thyroid cartilage. Sometimes the wound runs horizontally across the front of the neck at a lower level; occasionally the wound is on the right side, when it runs more obliquely from above downwards and forwards and does not cross the middle line. These are the positions of the wounds when the weapon is held in the right hand. A suicide will sometimes insert the weapon into the first cut, making one or more additional incisions which increase the depth or extent of the wound.

Thus an elderly man cut his throat late at night in a quiet street, inflicting an injury in the upper part of the right side of the neck. The wound was 3 in. long and extended forwards and downwards from a point 2½ in. below the right ear almost to the middle line half way between the thyroid cartilage and the chin. The injury consisted of two cuts, one from the hinder end for rather more than half the length of the wound; the knife was then inserted into the wound and the cut extended further forwards. A deep notch in the skin indicated the junction of the two cuts. The common facial vein was divided at a short distance from the internal jugular vein. The man walked about 200 yards after closing the weapon, a pocket-knife, and placing it in his pocket; he was found dead on the footpath; in his hand was a blood-stained handkerchief which had been used presumably to try and staunch the blood. Death was due to air embolism through the common facial vein. The man was probably making his way to his doctor, having repented after he had cut his throat, but he became exhausted and withdrew the handkerchief from the wound, and air entered the open end of the vein.

A suicide sometimes cuts his throat in front of a mirror, in order to see that the weapon is placed as he desires; almost invariably the neck is bared before the attempt is made. If the weapon is again inserted into the cut the structure most often damaged is the larynx, in which several cuts may be found when there is only one skin incision. It frequently happens that a suicide makes a number of other attempts on the neck before producing the fatal wound. These tentative cuts are very superficial; they start near the main wound, and run approximately in the same direction; a dozen or more may be present, when they will be close together and may run into one another. A suicide sometimes injures other parts of the body before cutting his throat; a series of parallel cuts may be found across one wrist, usually the left, or across the front of the left chest, but it is rare for a suicide to employ the same weapon both for stabbing and cutting in different parts of the body. Such a case is described later in the lecture.

An unusual case with a wound in another part was that of a Japanese gentleman who first made a half-hearted attempt at suicide by hara-kiri, a wound 7½ in. long being found across the front of the abdomen; the wound penetrated down to the deep fascia. He had then cut his throat in no uncertain fashion, inflicting an injury 6 in. long in the upper part of the neck on the right side: the wound started three-quarters of an inch from the middle line at the back, and passed forwards and downwards to the middle line in front; at the back were eight separate tentative cuts. The wound gaped widely and the thyroid cartilage was exposed and was cut in three places, none of the cuts passing completely through it; the internal jugular vein was completely divided, there was a small opening in the common carotid artery, and the body of the fourth cervical vertebra was nicked in two places. A suicide occasionally takes poison and then cuts his throat, and I have seen two cases in which a suicide drank strong hydrochloric acid.

In the following case the plane of the wound was unusual for a suicide. An elderly man had a wound 7½ in. long across the upper part of the front of the neck; it was straight and horizontal, extending further on the left side with the right end undercut. The wound penetrated deeply upwards and backwards immediately above the hyoid bone; the front wall of the pharynx was divided for more than an inch and the cut extended into the root of the tongue on the left side. The only vessel divided was the left common facial vein, close to its termination. Air entering through the cut vessel had caused death from air embolism. This case and the one already described are the only two suicidal cut-throats in the series in which death was due to air embolism; in each case the common facial vein was divided.

The next two cases are examples of multiple suicidal injuries of the air passages; they are seldom seen excepting in the insane and those who are in delirium. The first was that of a man who cut his throat whilst suffering from lobar pneumonia with delirium; the wound crossed the middle of the neck, was 3 in. long and gaped widely; it consisted of at least two deep cuts, and there were incisions in the exposed cartilage and another in the upper part of the trachea. Close to and parallel to the main wound were ten superficial cuts There were six superficial cuts in the right cheek; on the front of the chest were 12 similar cuts internal to the left nipple; they were parallel, extended from left to right and slightly downwards, and lay within an area measuring 3 in. by 3 in. There were five parallel superficial cuts on the right wrist, several on the front of the left wrist, one of them deeper, and a number of superficial parallel cuts and one

deeper cut on the inner side of the right thigh 4 in. above the knee.

In the other case a woman whose mind was affected by excessiye drinking attacked a man who was in bed with her, drew a knife across his throat, and inflicted a superficial injury; she then cut her own throat, and a gaping wound 3½ in. long ran horizontally across the front of the neck. In the exposed air passages were four deep incisions, one through the first ring of the trachea, a second between the cricoid and thyroid cartilages, and two others close together through the upper part of the thyroid cartilage, where a piece of the cartilage was missing. The margins of the skin incision on the right side were notched in two places by the additional cuts in the air passages. The thyroid gland was cut in several places, but the only blood-vessel opened was the right external jugular vein. There were four tentative cuts close to, and parallel with, the gaping wound.

Occasionally laceration is found in the deeper part of an incised wound. A man who cut his throat had a gaping horizontal wound 4½ in. long across the middle of the neck, chiefly on the left side; the wound was deep in the middle and undercut at the right end; the larynx had been opened by a deep cut through the thyroid cartilage and a part of the left sterno-mastoid muscle was cut. On the left side the wound penetrated deeply and appeared to be lacerated, and a tear extended along the left wall of the œsophagus for a distance of 2 in. The deeper part of the wound had been torn open with the hands after the throat was cut.

Except in lunatics suicidal wounds in the neck usually have a fairly characteristic position and direction. Homicidal, whilst sometimes simulating suicidal wounds may have any position and may run in any direction. The difference is well seen when multiple wounds are present; in suicidal injuries it is rare to find more than one deep wound in the neck, any other injuries being superficial tentative cuts; in homicidal cases there are no tentative cuts, but several deep wounds may be found. When two injuries are so severe that either alone would produce rapid loss of consciousness, as, for example, when the carotid arteries are cut on both sides in two separate incisions, we have the strongest presumption of homicidal causation.

A very unusual case was one in which a husband was put on his trial for the murder of his wife by cutting her throat. At the time of her death she was six months pregnant and was suffering so severely from chorea gravidarum that she had great difficulty in feeding herself and had to be assisted in dressing. A medical man who had examined her three days before she died found her incapable of any continuous muscular effort of the nature of a grip; she suffered much from restlessness and sleeplessness. Early one morning her husband ran out of the bedroom bleeding from wounds which he said had been inflicted by his wife, who had attacked him with a razor whilst he was lying beside her in bed. One wound extended along the right jaw from the angle to the middle line, the bone was exposed, and the facial artery divided. Two wounds, each 4 in. long and skin deep, were found on the back of the left side of the neck. There were cuts on the palmar aspect of three fingers of the left hand.

On entering the bedroom the woman was found dead on the floor by the side of the bed with a pile of bedclothes around her. When she was turned over an open razor was found near her right hand. There was a pool of blood on the bed and in the blood a hairpin and much hair, one strand being 8 in. long and ¾ of an inch thick. Splashes of blood were found for 5½ ft. above the level of the bed on an adjacent wall; they had been flung from the blood-stained razor when it was raised to inflict the later injuries.

On examination of the dead body the following injuries were found. There was a long, deep, incised wound around the right side of the neck from the middle line behind almost to the middle line in front. At the back it penetrated to the spine and at the side completely divided the common carotid artery and the internal jugular vein and opened the œsophagus. On the left side of the neck was a similar wound extending from the middle line at the back, where it overlapped the other wound, to the front of the neck where they almost met. On this side the internal jugular vein was opened and the common carotid artery almost completely divided. A third wound crossed the lower part of the back of the scalp; it was 4 in. long and about three-quarters of an inch deep; there was a superficial cut on the right side of the front of the neck. There were also superficial wounds on the right ear, the lower lip, on the palmar aspect of the right ring and index fingers, and across the knuckles of the left index and middle fingers. As the husband and wife were the only persons concerned, the facts were capable of three different interpretations—the one given by the husband, that his wounds were caused by his wife who had then taken her own life; another, that the man's injuries were inflicted by his wife and that he had wrested the razor from her and inflicted the injuries upon her. The third explanation was that the husband had attacked and killed his wife and that his injuries were self-inflicted. The wife had shown no sign of insanity, and in view of the severe chorea from which she was suffering it seemed improbable that she could have grasped a razor so firmly as to have inflicted several serious injuries upon herself, whilst the slight cuts on the ear and lip might well have been the misdirected attempts of another person. The wound across the back of the scalp could only with difficulty have been self-inflicted. When the two deep wounds in the neck are considered, the infliction of one of them would be followed by such a rapid fall of blood pressure that there would scarcely have been time before consciousness was lost, for the weapon to have been transferred to the other hand for the infliction of the second injury. But the division of the muscles on one side of the neck would have produced instant flexion of the head to the other side and would have rendered impossible the production of a clean cut on that side as a self-inflicted injury. An assailant, grasping her by the hair, could have slashed the neck, producing all the injuries; the hair found on the bed indicated that the head was held when the cut through the scalp severed a portion of the hair, causing it to fall on the bed when the grasp was relaxed. In my view the woman's injuries could not have been self-inflicted. The wounds on the palmar aspects of the fingers of the husband and wife might well have been caused in each case by an attempt to grasp the weapon wielded by the other, and the wounds on the knuckles of the woman's left hand were suggestive of injury inflicted by another person.

The husband was found not guilty of the murder, the jury probably being influenced by the fact that he had injuries upon himself, one at any rate of a severe nature, and also by the evidence that he was a quiet, sober, hardworking man, whose relations with his wife had always been happy. The verdict was equivalent to one of suicide, but I am certain that the injuries could not have been self-inflicted.

One of the most difficult homicidal cut-throats to distinguish from a suicidal injury is that inflicted when the assailant attacks the victim from behind and draws the weapon across the front of the neck. The position and the direction of the wound depend upon the relative positions of the two persons; it generally makes a clean sweep of all the soft tissues in the path of the weapon; it is often more curved than a suicidal injury, and the plane of the wound may differ from a suicidal cut, but in some cases it closely resembles one.

An important distinction between homicidal and suicidal cut-throats is that the suicide almost invariably bares the neck, but the murderer cuts through the clothing. When the injury is inflicted from behind the assailant makes a sweeping movement which starts before it reaches the throat and passes beyond the

limit of the wound; clothing may be cut in its passage before or after the wound is inflicted, and blood will be found on the edge of the cut if the weapon has already passed across the neck. The two next cases are examples of the value of information obtained from cuts upon the clothing.

In the first case the dead body of a young married woman was found one morning in a quiet lane. She had a gaping wound 4 in. long on the front and right side of the neck; the internal jugular vein was completely divided, the larynx was opened in front and on the right side, and the œsophagus was incised at its upper end. A fur collar round the dead woman's neck had been cut by the weapon in line with and to the right of the wound. A razor belonging to the husband and found in his bedroom had dried blood upon it, and adhering to the blood were rabbit hairs similar to those which formed the fur collar. The weapon had cut the collar after inflicting the injury; this gave the direction in which the cut had been made. The dead woman was wearing a knitted jumper, and across the front of the left shoulder of the article was what appeared to be a tear. On close examination this appearance was found to be due to a clean cut, the material becoming unknitted and giving the appearance of a tear; no blood was present on the cut edges. The weapon, therefore, had been drawn across the front of the left shoulder, and then passed across the neck, cutting through the fur collar after it emerged from the wound. The cuts in the clothing afforded a clear proof that the injury was a homicidal one. The husband was charged and was convicted of murder.

In the second case a young woman had her throat cut in the road by her lover from behind. A gaping wound was found on the front and right side of the neck; it was between 5 and 6 in. long and was unusually curved, the right extremity passing at the back almost vertically upwards behind the ear. The common carotid artery and the internal jugular vein had been opened in the wound, and there was a large cut in the lower part of the larynx. After the injury had been inflicted the girl ran through a gate and along a winding garden path in the dark, opening the back door and passing through the scullery into the kitchen where she pointed to her throat before she fell, having covered a distance of about 75 yards. She was wearing a beaver hat with a broad brim, and a clean cut passed through the brim on the right side; the lower edge of the cut was smeared with blood, showing that it had been made by the weapon after it had passed through the neck.

In four cut-throat cases, two of them suicidal, air embolism was the cause of death; in none of these was there any injury to the main arteries, and in none were the large veins completely divided. The internal jugular vein was opened in one, in two others the common facial vein was completely divided close to its termination, and in the fourth case another tributary close to the internal jugular vein. Air embolism occurs when the internal jugular vein is opened, or when a large tributary is cut across close to the main vessel rather than when the main vein is completely cut through. In two cases, both homicidal, the cervical sympathetic nerve had been partly or completely divided; in these cases the pupil was smaller on that side than on the other.

One case in the series was a suicidal incised wound of the abdomen in an elderly woman; there was a cut 2¾ in. long in the middle line of the abdomen below the umbilicus. She was admitted into hospital with a large part of the small intestine and the omentum protruding through the wound; these were replaced and the wound sutured, but she died shortly afterwards. The weapon, a razor, was found folded up and placed in a box in the bedr n in which she was found. Suicide was also indicated by the presence of several superficial cuts radiating from the umbilicus, chiefly on the left side, 14 superficial parallel cuts on the front of the left wrist, a similar cut on the left thenar eminence, and many others on the left side of the neck.

The last example of an incised wound was in a man who was found by the night watchman in the lavatory of a theatre after it was closed for the night. He was bleeding from a wound in the left arm and died shortly after he was found; a small blood-stained razor was found upon him. The wound was slightly more than 2 in. long and crossed the front of the left forearm 1½ in. above the wrist. Several tendons were divided and the radial artery was completely severed; the incision extended down to the radius. No other wound was found and the organs were pale from loss of blood.

STABS.

Punctured wounds or stabs are injuries produced by instruments which pierce the skin; the weapon must therefore be pointed. These wounds generally have a depth greater than their length. Stabs form a class of injury intermediate between incised and lacerated wounds. The appearance of the wound depends upon the weapon which has been used to produce it; a sharp-edged and pointed knife, especially if it has a double edge, cuts as it pierces the skin and deeper tissues and the wound will everywhere be clean cut. A knife with a thick back produces a wound which is incised where the edge cuts its way, and lacerated where the back tears through the tissues. A pointed instrument which has no cutting edge, such as a butcher's steel, or a hatpin, only tears the tissues.

The edges of stabs require very careful scrutiny to determine whether they are mainly incised or lacerated in character, and it is impossible to give an opinion when suppuration has developed in the wound. A large variety of pointed articles has been used for the production of stab wounds—pins, needles, hatpins, knives, skewers, and fragments of broken glass; some of these, such as broken glass, are responsible chiefly for accidental injuries, and the same is true of pins, needles, hatpins, &c., but suicidal and homicidal injuries have also been inflicted by such means.

The small size of the skin wound and the depth of penetration render it difficult by external examination to judge the direction and to estimate the damage; there may be little external bleeding if the weapon has penetrated into one of the body cavities. The difficulty of judging the direction by probing the wound is increased when divided muscles retract and alter the shape of the wound.

In one case a man was stabbed behind the ear and the wound ran horizontally and penetrated into the spinal canal; when it was explored with a probe it appeared to run down the neck, the sterno-mastoid muscle having been divided and retracting to such an extent as to produce a pocket below the entrance wound which was almost 2 in. deep.

The degree of damage to the deep tissues in a wound also depends on the weapon; one which combines a sharp-cutting edge with a point will pierce and cut everything in its path and will be far more dangerous to life than a blunt-pointed object having no cutting edge, which will tend to push aside rather than pierce blood-vessels, or viscera such as the lungs, which yield readily to pressure.

Accidental stabbing injuries rarely endanger life apart from subsequent sepsis. I have collected 18 cases of deaths from stab wounds; none of these were accidental, 11 were homicidal, and the remainder suicidal. Many of the homicidal and suicidal stabs were inflicted with a weapon which had a cutting edge, and the length of the wound depended upon the extent to which the cutting surface had been used.

A suicide stabbing himself in the chest with a pocket knife sometimes withdraws the weapon from the wound by an exact reversal of the movement which has inflicted the injury; no further injury to the skin may be produced than that required to drive the weapon into the tissues, and the surface wound may have a diameter, when allowance is made for the elasticity of the skin, rather less than the breadth of the penetrating portion of the weapon; the edges of such a wound may be everted as the weapon is gripped

by the skin during withdrawal. In homicidal cases the movement of the victim during the infliction of the injury is likely to cause the wound to be enlarged during withdrawal, and the surface wound will then be of greater width than the blade of the weapon.

Suicidal stabs are usually made over vital areas, the front of the chest in the region of the heart being the commonest situation. The wounds are generally multiple, are situated within a small area, and have much the same direction in the tissues. Suicidal stabs in the neck are infrequent, but a combined incised and stab wound is occasionally seen: a cut is made in the neck and the point of the weapon is driven deeply into one part of it. Stabs and incised wounds are frequently associated in suicides, the failure to produce the desired result by stabbing causing the suicide to use the cutting edge of the knife on other parts of the body. In five stabbing cases incised wounds were found on the neck or elsewhere. In one case death was brought about by drowning in a bath after a number of stabs and incised wounds had been inflicted; in two others, both insane persons, the suicide also jumped from a window.

One of these cases was a young woman who had become insane as the result of influenza and pneumonia during the epidemic of 1918: she inflicted injuries upon herself with a table-knife, four superficial incised wounds being found on the upper part of the neck on the left side; they were typical suicidal wounds, parallel and running slightly downwards towards the right. There were 11 superficial cuts on the lower part of the front of the left chest mainly internal to the nipple. She then thrust three table-knives down her throat, one passing down the œsophagus into the stomach where it cut the mucous membrane. Another knife had stabbed through the epiglottis and the posterior pharyngeal wall and was then pushed down in the cellular tissues in front of the spine to the posterior mediastinum: it penetrated into the right pleural cavity, in which it lay free. The third knife followed the track of the second and was found with the blade projecting into the pleural cavity, the upper half of the handle being in the mediastinal tissues; the pleura contained half a pint of blood. She then jumped from the bedroom window, falling a distance of over 20 feet which caused a bruise on the temple and some meningeal hæmorrhage.

The suicide who drowned himself in a bath had an unusual distribution of stabs associated with incised wounds. There were six wounds on the neck: two were short incised wounds on the right side of the neck a short distance below the ear and the angle of the jaw respectively; another incised wound four and a half inches long was at a slightly lower level—at its front end it penetrated upwards and backwards for one inch towards the floor of the mouth. There were two other slight cuts in the neck, and a stab wound immediately above the sternum which extended for a distance of one and a half inches to the left and slightly upwards. There were at least seven tentative cuts close together on the upper part of the left side of the neck. There were two stab wounds in the left chest below the nipple: one was superficial, the other penetrated into the left pleural cavity. There was a superficial stab immediately below the sternum and there were two stabs in front and on the inner side of the left elbow. No important structures were divided in any of the wounds.

An injury which combined the characters of an incised wound and a stab was found in the upper part of the right side of the neck of a man who had committed suicide. The wound was almost two inches long and was parallel to the lower border of the jaw and extended behind the angle: it was very superficial in front, but at the back it penetrated for almost three inches, passing backwards and slightly inwards, dividing the internal carotid artery, the internal jugular vein, the vagus nerve, and the sterno-mastoid muscle: it extended into the erector spinæ muscles behind. There were three other superficial cuts close to the main injury, and one on the right temple. A suicidal stab wound in an old man passed through the upper part of the anterior abdominal wall obliquely downwards, pierced the gastro-hepatic omentum, and penetrated into the body of the pancreas.

A difficult case was that of an old man 78 years of age, who was bedridden and lived with his wife aged 80. According to her statement he was left for half-an-hour propped up in bed, and on her return was found dead, with blood on the front of his clothes, a large pair of scissors lying upon his abdomen. He had a stab wound on the front of the left chest a short distance above and to the inner side of the nipple. The weapon had entered the chest through the fourth intercostal space, crossing the left ventricle of the heart and penetrating into the right: the pericardium contained much blood. He had a transverse cut an inch long on the left side of the neck extending slightly across the middle line: it appeared to be a single wound and had entered the upper part of the larynx where several parallel cuts were seen in the thyroid cartilage. He was in a very feeble condition and it was thought that the injuries might have been inflicted by his wife, who was also very feeble, but it was found that the stab in the chest had not passed through his vest and night-shirt, both being unbuttoned in front and the edges of the night-shirt turned in. A verdict of suicide was returned.

Stabs through the left ventricle of the heart do not always allow blood to escape from the cavity of the ventricle, the wound being closed by muscular contraction and later being sealed up by clot. This was the case in a man, obviously insane, who stabbed himself over the heart with a penknife, and attempted to cut his throat, inflicting 18 superficial wounds on the left side of the neck: he then threw himself out of a window. The stabs were five in number, situated close together on the front of the left chest wall internal to the nipple; they all penetrated into the pleural cavity in front of the lung, two passed through the parietal pericardium close together and the cavity contained half an ounce of blood clot. One passed completely through the anterior wall of the left ventricle close to the interventricular septum, where a small opening was present at the base of one of the papillary muscles. The fall from the window had fractured the right lower jaw and both thighs, extending into one knee-joint; he also had a lacerated wound on the forehead. He survived the injuries for a few hours and did not die from the penetrating wound of the heart, the small amount of blood in the pericardium having escaped from the edges of the wound and not from the interior of the ventricle.

Homicidal stab wounds, in contrast with suicidal, are more frequent in the neck, the chest taking second place, and the abdomen coming last. These wounds often have a position and direction which would render it difficult or impossible for them to have been self-inflicted. Thus a woman was stabbed, and 13 wounds were found upon her body. The wound which was mainly responsible for her death was a stab about an inch and a half long, situated in the lower part of the neck on the right side immediately above and parallel to the outer part of the clavicle. The wound penetrated for about 4 in., running inwards and slightly downwards, dividing one cord of the brachial plexus, opening the right subclavian artery, and entering the pleura immediately below it, cutting the apex of the lung and penetrating to the outer surface of the trachea. The right pleura contained 15 oz. of blood. Another stab four-fifths of an inch long entered the lower part of the back of the left chest 3½ in. from the spine, and extended for more than 2 in. into the lower lobe of the lung. The pleura contained about 4 oz. of blood. There were two stabs at the back of the left chest internal to the scapula, each measured 1 in., and they ran upwards and inwards for a distance of 2½ and 3 in. respectively through the subcutaneous tissues and muscles. There was a stab 1½ in. long in the upper part of the neck on the left side close to the scalp; it penetrated for more than 2 in. inwards and slightly

upwards without injuring any important structures. There were several irregular cuts, most of them superficial, on the lips, the left cheek, the neck, and the left upper arm; no large blood-vessels had been divided in these wounds. The chief wound in the neck could only with difficulty have been self-inflicted; the three wounds at the back of the chest were clearly homicidal injuries, and the injuries on the face were unlike suicidal wounds.

Since homicidal stabs may pass in any direction it is particularly difficult to estimate the extent of the injury, and a part of the track of a wound may be missed during an operation to repair the damage. In a case of stabbing in the abdomen where a small knife had been used, the wound in the abdominal wall was half an inch long and was situated 2 in. above the pubic bone immediately to the right of the middle line. The track of the injury was obliquely downwards and backwards, passing into the peritoneal cavity and transfixing a coil of small intestine 18 in. above the ileo-cæcal valve; it then passed through the parietal peritoneum on the right pelvic wall and extended for a distance of 3 in., opening the external iliac vein. Acute abdominal symptoms developed two hours after the injury had been inflicted; an operation was performed, a large quantity of blood was evacuated from the peritoneum, and the wound in the intestine was found and sutured, but the further course of the track was not discovered and the patient died a few hours later from peritoneal hæmorrhage.

A stab which penetrates into one of the body cavities—e.g., pleura or spinal canal—may cause death from internal hæmorrhage with little or no external bleeding. In the case already referred to of a homicidal stab wound behind the ear, the victim was a young Canadian soldier who was on leave in London during the war and who was known to be in possession of a fairly large sum of money. He was struck on the side of the head, fell down immediately, and died in a few minutes. On examination a stab was found directly below the right mastoid process. The wound was horizontal and just under half an inch in length; the track passed inwards and slightly backwards, the right occipital artery was completely divided, and the weapon had pierced the dura mater in the occipito-atlantal space without injuring the spinal cord. Hæmorrhage from the artery passed inwards along the track into the subdural space and surrounded the whole of the spinal cord, and a large part of the base of the brain, causing death from meningeal hæmorrhage. The depth of the wound was almost 2 in. It was suggested that the injury might have been caused by a fragment of broken glass, but it was clear that a wound so narrow and so deep could not have been caused by that means.

Homicidal stabs in the neck sometimes run very obliquely downwards, penetrating into the chest and producing rapidly fatal injuries. In one case a wound was found immediately above the sternum slightly to the right of the middle line; it was half an inch long and vertical in position. The weapon passed downwards and slightly backwards in the superior mediastinum, opening the left innominate vein, and extending through the left parietal pleura. Blood from the injured vein accumulated in the pleural cavity, which after death contained over six pints. There was a cut in the shirt corresponding with the wound in the neck.

In another case there was a wound on the front of the neck on the left side 2 in. above the clavicle; it was one and three-fifths of an inch long and was vertical; it passed almost directly downwards through the sterno-mastoid muscle and the internal jugular vein, entering the left pleural cavity at the apex, cutting the subclavian artery, and penetrating into the apex of the left lung for a distance of three-quarters of an inch. Hæmorrhage from the cut vessel was almost entirely internal, and 3¼ pints of blood were found in the left pleural cavity.

In a case of murder a wound in the neck, like one of the suicidal cases quoted above, combined the characters of a cut throat and a stab. It was 5¾ in. long, situated in the upper part of the front of the neck more on the right than the left, and ran slightly upwards from left to right. The larynx had been opened between the thyroid cartilage and the hyoid bone and gaped widely. On the left side of the neck the wound penetrated deeply as a stab, dividing the sterno-mastoid and other muscles, dividing completely the left common carotid artery, and partly dividing the internal jugular vein. It cut through the intervertebral disc between the fourth and fifth cervical vertebræ from its margin to the middle line and half divided the spinal cord. The wound appears to have been made by a single stroke, the weapon being thrust deeply into the left side of the neck, and withdrawn across the right side of the neck.

In three homicidal cases death was due to injury of the heart. In one the weapon passed completely through the left ventricle and interventricular septum, a large amount of blood escaping into the pericardium and left pleura. In another the weapon penetrated from above and transfixed the pulmonary artery, passed through the right ventricle into the left auricle. In both cases death followed rapidly, but in the second case the victim ran a distance of 40 yards before she fell unconscious.

In the third case the weapon passed through the front wall of the left ventricle close to the interventricular septum, the cut on the inner surface of the ventricle being small; he survived the injury for about 22 hours. An operation was performed and the wound in the heart was sewn up. At the post-mortem examination the wound in the heart was closed by blood-clot; a small amount of blood was found in the pericardial cavity which had escaped from the wound.

In two homicidal cases death was caused by injury of the lung. In one there were two wounds, one penetrating the right lung from the front, the other the left lung from above, the stab having been made immediately above the inner end of the clavicle; death occurred three days later. In the other case the injury was inflicted on the front of the left chest immediately below the clavicle; it penetrated into the lung, and after death, which occurred 12 days later, the pleura contained between five and six pints of blood. Hæmorrhage from a peptic ulcer in the stomach, which began a week after the injury was inflicted, and continued to the end, probably determined the fatal issue.

DONATIONS AND BEQUESTS.—The late Mr. James Maxwell Grant Prophit, Glenluce, Wigtonshire, and Portland-place, W., after the fulfilment of several personal bequests, left his residuary estate, subject to his sister's life interest, for a trust fund of which one-half is to be applied for inquiry into the nature, cause, prevention, treatment, and cure of tuberculosis, and one-half for a similar inquiry regarding cancer, as a board of special trustees shall decide. The value of the bequest will be about £160,000 net. The board of the trust fund is to consist of the chairman for the time being of Barclays Bank and chairman of the Chartered Bank of India, Australia and China, the President of the Royal College of Surgeons of England, and the President of the Law Society. The trustees may, amongst other powers, apply the funds of the trust in financing persons or institutions conducting such research, in the equipment and (or) endowment of institutions or laboratories for this purpose, and in publication of the results of such researches.—An anonymous donor has presented £50,000 to the Governors of the Royal Technical College, Glasgow; a condition of the gift is that the sum is to remain as the permanent capital of the College.—Sir Robert Hargreaves Rogers, Bexley, Kent, left £500 each to Bexley Cottage Hospital and Bexley Victoria Homes.—Following the gift of £4000 to Newark Hospital by Mr. H. W. Adams, a local councillor, from charity funds at his disposal, it was announced at the governors' meeting on Feb. 24th that £5000 had been subscribed towards the erection of a nurses' home by Mr. Harry Coultby, of Cleveland, U.S.A. The donor was born at Claypole, a village near Newark.

THE DIAGNOSIS OF INCIPIENT INSANITY IN YOUNG ADULTS.

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THROUGH the controversies which have arisen over the psychological teachings of Freud, psychiatry has been brought of late to the notice of the general practitioner more than ever before.

As the family doctor deals with the earliest signs of bodily disease, so he is the first to treat the early symptoms of mental disorder, seeing the patient in the most hopeful stage. But in the cases with which this article deals, the onset of symptoms is so insidious that the serious nature of the trouble is often not suspected until this early period has passed. It would, then, be an advantage if one could indicate some of the signs and symptoms which would place the doctor on his guard; and this is likely to be especially important in the near future when there will be an extension of the voluntary boarder system and of clinics for border-line cases.

Forms of Insanity Occurring in Adolescence.

For the purpose of classification, the form of psychosis occurring in adolescence may be grouped under three headings: (1) Confusional psychosis; (2) manic-depressive psychosis; (3) dementia præcox. This article does not deal with the first two conditions, for they are not peculiar to early adult life, and their sudden onset and acute mental symptoms remove them from the category of "incipient insanity." But the third heading—dementia præcox—includes a large number of cases which are peculiar to early adult life, and which present grave difficulties to early diagnosis because of their insidious onset, when the symptoms may closely resemble those of one of the common neuroses. It is with these cases that this article is intended to deal.

The term dementia præcox has been much criticised because it covers such a variety of cases, but even if it be not the clinical entity which it was once supposed to be, yet its use is a great convenience. It includes those patients who exhibit an inability to grapple with their environment, a consequent turning away from reality to live in a phantasy world of their own, with a progressive deterioration, both emotional and intellectual.

Insidious Development of Dementia Præcox.

The gradual onset of the trouble must always be in the mind of the general practitioner, as he may be consulted at any stage of the disorder. The usual course may be summarised as follows. A shy, seclusive individual gradually becomes more and more self-centred and apart from his fellows. He loses interest in outside affairs and his emotions and desires weaken. Less and less energy remains for his life's work, and he retires from it to occupy himself with phantasy. Misconstructions, to which he was ordinarily rather prone, develop into delusions, as he projects his own apathy on to others. Hallucinations add to the variety of his phantasies and he loses the power of distinguishing one from the other. Abnormality of conduct follows. Then, in many cases, the apathy becomes profound, intellectual deterioration sets in, and a condition of profound dementia results. If this gradual trend of events be remembered, the disorder may be suspected when no very definite signs are present; but, as well as the general consideration of the case, there are certain signs of a more definite character which may be noticed in the early stages.

Early Dementia Præcox: Some Characteristic Signs.

Mental Signs.—A point in the history which is worth noting is the occurrence of moral lapses or minor disorders of conduct. For example, one patient had been in constant trouble in the R.A.F., for committing petty offences "out of bravado"; another had twice stolen worthless articles. In the first case it was two years before mental trouble was suspected.

The psychotic often interpolates in his conversation which may be otherwise quite rational, remarks of an unusually bizarre character. Such expressions as "my heart feels compressed and light"; or "I feel I have no blood in my body," are the type of thing met with. The fantastic character varies from a remark put in a slightly unusual form to such a statement as "I have no roof to my mouth," an obvious delusion. When pressed to explain these statements the replies of the patient are unsatisfactory and inconsequent. Often the symptoms of which he complains are put in a peculiar way. He may state that one part of his mind is struggling with the rest, or that one part appears to be talking to the other. While he may then have insight into the symptom, a remark such as that not infrequently heralds the more complete dissociation which will be shown by hallucinosis. Symptoms of this kind should be regarded with suspicion.

The question of insight is one of some interest. While a neurotic always has insight into his condition—that is, he always ascribes his condition to some natural physical cause—a psychotic typically has no insight. But in these early cases of dementia præcox the patient usually ascribes his condition to something wrong with his brain or his head, and he only gradually loses insight as the disorder progresses. A stage is often passed through when the patient sometimes has insight into his condition and at other times has not; or he has insight into some symptoms and not into others; or, again, he has insight into the several symptoms themselves, but plainly does not recognise the profound nature of the disability from which he is suffering. For example, one extremely depressed patient quickly recognised that her depression was abnormal and best treated by medical means, whilst still maintaining the truth of the delusions on which the depression was founded.

Though an intellectual defect is not a marked sign in an early case as a general rule, yet it may occur and must not be overlooked. For example, one apparently intelligent patient could not remember the date of the beginning or end of the war, nor any particulars of its onset and progress.

Physical Signs.—The text-books describe a number of physical signs of dementia præcox. Amongst these, transverse wrinkling of the brows, wasting of the thenar and hypothenar eminences, and the tendency of the hair to stand on end are not commonly found in the early stages. But complaint may be made of the development of hair in unusual situations. Sweating may be confined to one limb or portion of the body. The circulation in the extremities is frequently poor, and the patients show cold and blue hands and feet which may become œdematous.

Dementia Præcox and the Neuroses.

Now it is during the long development of the psychosis that confusion with one of the neuroses may occur. All the neuroses merge into one another in indefinable grades, but for the sake of convenience they may be classified into: (1) Neurasthenia; (2) hysteria; (3) compulsion neurosis; (4) anxiety neurosis. Cases will be described in which the diagnosis between these conditions and that of dementia præcox was uncertain, so that the important points may be exemplified.

Dementia Præcox and Neurasthenia.—CASE 1. Male, T. B., aged 26, clerk. This patient came up to hospital complaining of an excessive feeling of tiredness, with a consequent loss of energy. He suffered from headache and slept badly. He gave a clear account of himself, showing no cognitive defects. He expressed affection for his mother, and anxiety at not having the energy to work for her. He said that he was seclusive, and he appeared to be unduly suspicious of a brother-in-law who lived in the house. He

had not been subjected to any particular stress, but he had worried a good deal over the habit of masturbation which he had endeavoured to suppress.

From these symptoms a diagnosis such as neurasthenia would be considered fairly safe, and the condition would be regarded as likely to clear up with simple advice as to rest or a holiday in the country. The patient was admitted to hospital in February, 1923, and on investigation some rather more suspicious facts were elicited. Lately he had become rather surly and morose, he had sometimes locked himself in his room, and he had been heard tramping about at night. However, considering the case as a whole, he showed then but little affective change. What change there was, was not towards the apathy of a dementia præcox, for he showed symptoms of anxiety. There was no cognitive impairment. He showed considerable loss of conative power in his lack of energy. After some months in hospital, where his behaviour was normal, he was discharged "recovered" and went back to work. For six months he remained at work, but with ever-increasing difficulty. He became apathetic and hopeless, and on readmission to hospital he passed into a state of catatonic stupor, in which he remained for five months. Now (Feb. 25th) he has recovered to the extent of working well in an institution, but he shows some intellectual deterioration.

In general, this case shows the importance of keeping the possibility of a psychosis in the mind in a young adult with neurasthenic symptoms, and shows also the value of a careful history revealing the change which had been taking place in the disposition. There were other points of interest. When he first came up to hospital his symptoms were few, yet his disability was profound—a disability not limited, as in many neurotics, to his work, but extending to all his activities. He had had no extra strain to cause a breakdown. In fact, the early dementia præcox often seems to be absolutely disabled, with, as it were, very little to show for it. His symptoms are few, often consisting, as in this case, of headache and loss of energy with a feeling of anxiety about his condition, the cause of which he cannot understand. On the other hand, the typical neurotic complains of many symptoms, of which he is rather pleased to talk, and despite which he is often able to continue his work satisfactorily. In the early stages the degree of disability of the dementia præcox is much more pronounced. It was noticeable that when this patient began to relapse a game of tennis produced complete exhaustion and great depression.

Another point of interest is that when first seen he showed anxiety about his condition. Despite the text-book description of dementia præcox, this anxiety is usually found in the early stages rather than the apathy which is characteristic of the later phases of the disorder.

Dementia Præcox and Hysteria.—Hysteria and dementia præcox are conditions which usually appear to be entirely distinct, yet cases arise in which the diagnosis is at first by no means easy.

CASE 2.—Male, aged 24. He was the eldest of nine children, and had won several scholarships while qualifying as a teacher. After teaching for three months he broke down, becoming "nervy" and excitable, unable to reply to questions or to stand noise. He stopped at home and was treated by a doctor for about a year before admission to hospital. On admission, he gave a coherent account of the development of his illness, showing no cognitive defects at all. He usually spoke in a whisper, saying he had lost his voice, but sometimes this was nearly normal. He had a habit of holding all his muscles rigid for a few minutes at a time, and his explanations were vague. He did not express much anxiety about his condition, and quickly settled down in the institution, yet sometimes he reacted emotionally to trifling incidents.

The emotional variability, the aphonia, the absence of cognitive change, suggested the diagnosis of hysteria. The history of being idle at home for so long, the absence of desires for the future, the profound disability with only a few hypochondriacal symptoms suggested dementia præcox. The latter diagnosis was the correct one, for the patient became more and more apathetic, neglectful of his person, inclined to over-eat himself, and absolutely idle. But up to the time of his discharge intellectual change had not made appreciable progress, and he remained capable of conversing on abstruse subjects, such as psychology, thus exemplifying in a marked manner the dissociation between the cognitive and conative elements. It is to be noted that he broke down after he had qualified in his profession. In point of fact, a number of patients appear to break down while trying to educate themselves to a higher level than their capacity justifies.

Dementia Præcox and the Compulsion Neurosis.—Now this neurosis varies from the recurring doubts about having left the gas on, common to all normal people, to a form so severe that the worrying thoughts nearly drive the patient to despair. It is these severe types which approach the psychoses most nearly. At first sight a psychosis characterised by apathy would seem to have little in common with a neurosis characterised by doubt and worry, but again it must be remembered that worry attends the feeling of initial disability in the early psychosis, and on the other hand, the extreme degree of doubt reached by the severe obsessional neurosis limits activity as successfully as the apathy of the dementia præcox. A severe obsessional neurotic, wrapped up in his obsessions, with perhaps a few compulsive tics, has only to lose insight to become a dementia præcox typical in all salient features.

CASE 3.—Female, aged 23. When 18 years old the patient lost energy and had to be dressed and taken about by her mother. After recovery, she remained well until twelve months before admission to hospital, when she complained of apathy, pains in the head, and sometimes thought that people were talking about her. The history of the previous attack sounded like a psychosis, but the recent symptoms appeared to be rather of the neurotic type, especially as she was worried by a number of compulsive acts. She felt compelled to shake her clothes before putting them on, and when she once started washing she felt unable to leave off. There was no loss of insight. The diagnosis at that time was doubtful; the insight she displayed, the anxiety about her disability, showed that if she were a psychotic, she was in an early stage, but the suspicious early history and the great loss of energy rather pointed to this probability than to a neurosis. As she remained in hospital it became obvious that a compulsion neurosis was not sufficient to account for the complete disability under which she laboured. While the obsessions remained about the same she gave evidence of deterioration in her slovenly appearance. Though she expressed anxiety about her condition, this contrasted strongly with her completely apathetic behaviour. Towards the end of her stay in hospital she began to experience fleeting hallucinations, but she always understood their subjective nature and showed no other evidence of cognitive change.

Dementia Præcox and the Anxiety Neurosis.—In this neurosis the patient shows the mental symptoms and some of the physical signs of an exophthalmic goitre, but usually without any marked enlargement of the thyroid. The feeling of anxiety may be present all the time, or acute attacks may intermit with periods of comparative calm. This would appear to be a condition the very antithesis of dementia præcox, but such is not always the case. The anxiety which the early dementia præcox shows may simulate the neurosis and occasion considerable doubt.

CASE 4.—Male, aged 27. The patient, a shy, seclusive youth, had served in the ranks during the war, though he had had a good education. Afterwards he had financial and domestic trouble, the latter because he became engaged to a girl of a lower social status. He became depressed, and made an half-hearted attempt to commit suicide. In hospital he showed a chronic anxiety state with occasional acute exacerbations, not related to any known cause. He made bizarre remarks—e.g., he felt that "his subconscious self was dominating his conscious," but showed no cognitive changes. His affective state was one of anxiety with consequent conative loss. Gradually he improved and took a rational view of his illness, and left hospital quite well.

Now several points in the history—the seclusiveness, his serving in the ranks, and the association with someone of a lower social status—rather pointed to the fact that he was an individual not quite capable of living in the sphere in which he had been born.

Consciously or unconsciously he was creating an environment adapted to his capabilities. As Case 2 sought to overcome his inferiority by educating himself to too high a standard, so this patient sought the opposite solution of deteriorating to a lower level. These facts, together with the attempt at suicide, suggested that the case might regress further to a typical dementia præcox condition. On the other hand, his symptoms in hospital were those of an acute anxiety state, and he steadily improved, becoming, as far as one could judge, as normal as he had ever been. He showed no residual changes, some sign of which one would expect if he were a dementia præcox with a remission. Thus the condition was a temporary breakdown which one may call an anxiety neurosis occurring in an unstable individual. He was still quite well some months after leaving hospital.

The Importance of Mental Symptoms.

From the description of the above cases it will be seen how difficult the diagnosis may be between a neurosis and dementia præcox. But the majority of cases fall more easily into one or other group, and if the general practitioner is on the look-out for the main features that have been described, he will be likely to diagnose this type of psychosis at a much earlier stage than he usually does at present.

The value of trying to classify and note the mental symptoms may itself be doubted, but this is important for several reasons. From the work of Sir Frederick Mott we know that a regressive change in the ovaries or testes and other organs is constantly found in the well-developed dementia præcox. Yet we have seen that the first signs of this serious condition are invaribly mental, and only to be diagnosed from mental symptoms. Again, the doctor is often satisfied by finding some slight physical defect, entirely forgetting to investigate the general relation and reaction of the patient to his surroundings. While it is of the utmost importance that no physical illness should be overlooked yet it is worth while as well to consider these disorders from the psychological standpoint, to wonder why some patients react to an unsuitable environment with a neurosis, others with a psychosis, and to try to determine the correct relation of these conditions. The general practitioner can help to solve these and other problems, the solution of which will help to elucidate larger problems of human behaviour in general.

Summary.

(1) Dementia præcox is a common mental disorder in young adults. Following an insidious onset, it runs a prolonged course. The patient exhibits an inability to grapple with his environment, a consequent turning away from reality to live in a phantasy world of his own, with a progressive deterioration affecting primarily his emotions and ultimately his intellect in addition.

(2) The insidious onset causes considerable difficulty to an early diagnosis because the condition is liable to be mistaken for one of the common neuroses.

(3) The diagnosis between dementia præcox and these conditions is important because: (*a*) the different prognosis and treatment in the two cases; (*b*) the desirability of early investigation of dementia præcox; (*c*) the probability of extension of facilities for treating early cases in the near future.

(4) The diagnosis of dementia præcox mainly rests on: (*a*) considering carefully the history of the case with the development of the personality of the patient; (*b*) recognising the typical mental symptoms and physical signs, the most typical of which are the emotional apathy and loss of energy together with a poor circulation in the extremities.

I wish to thank the medical superintendent, Dr. Edward Mapother, for permission to publish this article.

PROPHYLAXIS AND THERAPY IN ANIMAL TUBERCULOSIS.

BY H. SCHÜTZE, M.D.

(*From the Lister Institute.*)

NUMEROUS have been the attempts to produce immunity to or to cure tuberculosis in laboratory animals. Very few have been the successes reported, and those few apparently favourable results usually lack any subsequent confirmation or disproof. The reader is left with a single experiment, often of small extent and inadequately described, as a verification of the particular therapeutic theory.

Previous Experimental Work.

In the literature of the last 20 years have been found these accounts of experimental work on this question. Maffucci and di Vestea (1901) treated 124 guinea-pigs with a specific serum and prolonged the average life of these animals by eight days beyond that of the 31 controls.

Noguchi (1909) produced such immunity in four guinea-pigs by inoculating with T.B. dissolved in sodium oleate that one survived indefinitely, one died of intercurrent infection after 90 days, and two remained well for 50 days (subsequent history unknown), while four controls died in 22, 25, 34, and 36 days. Zeuner (1909) treated three guinea-pigs with a sodium oleate vaccine, and found that they lived one, one and a half, and three months longer than three untreated ones. Broll (1910) re-tested Zeuner's vaccine, and prolonged the life of his guinea-pigs as much as four weeks. Two immunised calves, killed ten weeks after infection, showed few post-mortem signs of tubercle, while the control died seven weeks after infection with massive tuberculosis.

Marxer (1911) continued the investigation of Zeuner's vaccine. In his first experiments the following results were obtained:—

(*a*) Fifteen control guinea-pigs infected with 1/100,000 mg. T.B. Death in 1–9 months; average = 6 months. Eighteen immunised guinea-pigs infected with 1/10,000 mg. T.B. Two alive after 11 months, remainder dead in 1–10 months; average = 7 months.

(*b*) Four control guinea-pigs infected with 1/10,000 mg. T.B. Death in 1–5½ months; average = 3½ months. Seven immunised guinea-pigs infected with 1/10,000 mg. T.B. Death in 5–10½ months; average = 7½ months. Four treated guinea-pigs infected with 1/10,000 mg. T.B. Death in 1½–6½ months; average = 3 months.

(*c*) Two control goats died in 1 month. Of five immunised goats one dies in 2 months, four are killed after 3 months, two showing little T.B. and two resembling the controls.

A later report states that subsequent experiments, in which six experimental and six control guinea-pigs were used, failed to confirm these favourable results, all animals dying in about the same time.

Möllers and Wolff (1913) used Zeuner's vaccine and failed to protect guinea-pigs or rabbits:—

Six control rabbits died after 2, 3, 3, 4, 4, and 4 months. Six treated rabbits died after 1, 1, 1, 1, 3, and 7 months. Five immunised rabbits died after 3, 3, 3½, and 6 months, one being killed after 9½ months and showing little T.B.

Von Ruck (1912) inoculated guinea-pigs with a vaccine consisting of the soluble proteins of the tubercle bacillus plus some of its fatty extractives—two controls died in 31 and 41 days with much tuberculosis, five immunised guinea-pigs were killed after 90 days and showed little disease. In another batch the control died in 23 days with much tuberculosis, five immunised animals were killed after eight weeks and showed less infection, nine immunised animals lived till the time of the report (? how many weeks). Cummings (1913) re-tested von Ruck's vaccine on 20 guinea-pigs and found that the ten controls died in 34–94 days, the average being 55, and that the immunised animals died in 32–154 days, the average

being 57. Brown (1919) also used von Ruck's vaccine but with a less virulent infecting strain. His eight controls were killed after 112 days and all showed signs of tuberculosis; the six treated animals killed at the same time showed none.

Frugoni and Grixoni (1909) treated rabbits (? number) with thyroid extract and found they live longer (? how much) than the untreated. Ruppel and Rickmann (1910) claimed to have prolonged life in guinea-pigs for four months by means of immunisation (? details) with a specific serum. Of 14 guinea-pigs treated with a T.B. vaccine sensitised with this serum, ten survived for at least five and a half months and four died after one and a half, one and three-quarters, four and a half, and five months with little or no tuberculosis, whereas the controls (? number) all died in five to six weeks with marked tuberculous disease. Linden (1920) influenced the course of T.B. in guinea-pigs and rabbits favourably by means of copper salts.

Momose (1913) used a vaccine of T.B. treated with 10 per cent. NaOH and extracted with chloroform.

(*a*) Of five control guinea-pigs infected with 1/1000 mg. all die in 6–12 weeks. Of seven immunised guinea-pigs infected with 1/1000 mg. none die in 12 weeks. Of eight immunised guinea-pigs infected with 1/100 mg. three die in 12 weeks. T.B. lesions less as a rule in the treated than the untreated.

(*b*) Two control guinea-pigs die in 10 and 12 weeks, showing marked T.B. Of five treated guinea-pigs one dies in 17 weeks and four are killed after 24 weeks and show either no or slight T.B.

(*c*) Of ten control guinea-pigs six die in 4–14 weeks and four are killed after 10 and 16 weeks, all showing marked T.B. Of ten treated guinea-pigs three die in 7, 8, and 10 weeks, and seven are killed after 10 and 16 weeks, some showing no T.B., others slight T.B.

Rappin (1913) gave a vaccine (? living) of T.B. treated with specific serum and protected guinea-pigs (few details). Ostromushuski (1916) claimed to have protected guinea-pigs and influenced the course of the disease favourably by injecting copper gynocardate. Laitinen (1921) found that 20 guinea-pigs treated with calcium phosphate live one month longer than 30 treated with calcium hydroxide. Seiffert (1924) injected guinea-pigs with T.B. dissolved in NaOH —two controls lived 65 and 70 days, two treated eight days after infection live 64 and 68 days, two treated synchronously with infection live 166 and 170 days. Droussin (1921) declared that a vaccine treated with sodium fluorate and a specific serum (? nature) invariably immunised animals (no details). Serra (1921) raised the resistance of rabbits by feeding with the active principle of the liver (no details). Perrin and Remy (1921) treated four guinea-pigs with extract of nettles, and found that they lived for 24, 61, 63, and 75 days as compared with the 53 and 56 days of two untreated ones. Kahle (1921) considered that silicic acid induced a more chronic type of infection in guinea-pigs with a tendency to healing. Frank (1923) did not confirm the favourable effect of silicic acid. Culpepper and Ableson (1921) treated 12 guinea-pigs with sodium chaulmoograte, with one spontaneous death in 37 days (of 12 controls 11 die in 28–78 days), the remaining animals being killed off one for each death among the controls. Treated animals have improved weights and less advanced T.B. as compared with the untreated ones.

Dreyer (1923) treated four guinea-pigs, 28–39 weeks after infection, with a vaccine extracted with formalin and acetone (diaplyte vaccine): one died 11 weeks after commencement of treatment with signs of slight T.B., the three remaining animals were alive 16–20 weeks after treatment was begun (no controls). He also treated three rabbits five weeks after infection with a bovine strain and found their weights increased, whereas that of the one control remained stationary. Also inspection of the ulcer and nodule at the site of inoculation was regarded as evidence in favour of a beneficial influence exerted by the vaccine.

Boquet and Negre (1923) treated 50 guinea-pigs in three groups with a methylic extract of T.B.—death occurred after averages of 137, 140, and 90 days as compared with the 98, 97, and 90 days of the 18 animals in the three groups of controls. Treated rabbits die, four in 97 days, four in 89 days, as compared with two controls in 63 days. Of eight rabbits given a minute dose the two controls die after three months with massive T.B., and of the six treated animals five die after five and a half months with less than the usual signs of infection and one is killed after nine months showing but a few scars. Raw (1924) inoculated prophylactically with killed human T.B. of attenuated virulence. While five control rabbits died of infection with an attenuated bovine virus within four months, four of the five inoculated animals are still alive after ten months. Row (1924) injecting a vaccine of autolysed T.B. extracted with chloroform into guinea-pigs infected with T.B., kept five out of six alive and well—no T.B. seen on killing—for six months and more. The five controls all died in three to ten weeks.

A list of experiments such as this, neither confirmed nor definitely disproved, is very unsatisfactory, and gives clinicians no indication as to the direction in which they are to seek a likely therapy. To come to any conclusion as to the respective merits of these varied systems of prophylaxis and therapy is difficult, and the paucity of animals under observation often renders it impossible; failure to repeat results when the same type of antigen is used on different occasions is frequent, a spurious protection having sometimes, not impossibly, been obtained by the tubercle vaccine not being absolutely dead, for a living inoculum has been shown by Calmette (1924) and others to be capable of inhibiting a superimposed infection. It is important, therefore, that where attention has been widely drawn to a new remedy, the evidence which animal experiment can afford should be multiplied, and with this in mind the following series of inoculations was performed.

Therapeutic Experiment with Dreyer's Diaplyte Vaccine.

The experiment here described was carried out on the lines of the one reported by Prof. Dreyer. The animals employed were guinea-pigs fed on the regulation diet of oats, hay, and greenstuff. The infecting organism was, in the case of one batch of 18 animals, a human T.B. of medium virulence, "Lyons." The other batch of 18 received an attenuated bovine strain, "H 159 (b)," kindly supplied by Dr. A. S. Griffith. A tenth of a milligramme was inoculated subcutaneously into the thigh of each guinea-pig. Five weeks later, treatment with Dreyer diaplyte vaccine was begun. This vaccine was prepared with a six weeks' old glycerine-broth culture of a bovine strain "B 4." After one repetition of the extraction with formalin and acetone, defatting was complete. A Ziehl-Neelsen film counter-stained with methylene-blue revealed no acid-fasts or other recognisable bacteria; one counter-stained with strong carbol-fuchsin showed numerous more or less faintly staining bacilli and their fragments. The vaccine was diluted to the prescribed strength of $^1/_5$ mg. per c.cm. and given subcutaneously into the flanks of half the guinea-pigs, nine in each batch. The dosage, based on that used by Dreyer, varied from ½ to 1 c.cm., and was given at intervals of one to four weeks, the actual dates and doses being Oct. 19th, ½ c.cm.; Oct. 26th, ½ c.cm.; Nov. 5th, ½ c.cm.; Nov. 12th, 1 c.cm.; Nov. 22nd, 1 c.cm.; Nov. 30th, 1 c.cm.; Dec. 12th, 1 c.cm.; Dec. 20th, 1 c.cm.; Jan. 7th, 1 c.cm.; Feb. 6th, ½ c.cm. The daily weight curves indicate that the animals tolerate the inoculations well. No fall in weight could be related to the treatment and, indeed, throughout the experiment the curves of the treated and untreated guinea-pigs ran very similar courses. The dates of death are shown in the table given below.

Post mortem, similar lesions were seen in both the treated and the untreated—abscesses at the site of inoculation, caseating glands, enlarged spleens, necrotic

and caseating, livers, large and mottled; the lungs might be crepitant or hepatised, and in the case of the animals infected with the human strain, always studded with tubercles, in those infected with the bovine strain, the lungs were generally free from macroscopic signs of tuberculosis.

Guinea-pigs Infected with B. tuberculosis (Half the Number being subsequently Treated with Diaplyte Vaccine).

	Number of days after infection at which death occurred.	Average.
1. Infecting strain "Lyons," human T.B.		
Treated ..	48, 54, 73, 100, 105, 111, 115, 123, 164 ..	99
Untreated .	85, 92, 103, 115, 124, 142, 152, 185, 187 ..	113
2. Infecting strain "H 159 (b)," attenuated bovine T.B.		
Treated ..	112, 117, 120, 135, 150, 153, 155, 172, 213 ..	147
Untreated .	122, 163, 167, 171, 189, 213, 215, 226, 342 ..	201

Similar results have been obtained by Kettle and Caulfield, working independently, and using Dreyer's antigen: Kettle's (1924) ten control guinea-pigs lived on the average 78 days, while the treated ones lived 53 days; in another batch the eight guinea-pigs, given prophylactic as well as therapeutic doses, also lived, if anything, a shorter time than the untreated controls. The fibrosis which Dreyer saw in the lesions of his guinea-pigs and regarded as evidence of a tendency to healing, Kettle was able to demonstrate in his controls as well. And indeed it has been an established fact, since the Royal Commission on Tuberculosis (1911), that in guinea-pigs which live more than 100 days after infection with human T.B. fibroid and calcareous changes are frequent.

Caulfield's (1924) four control guinea-pigs died in 6–15 weeks, average = 10½ weeks; his six treated guinea-pigs died in 7–? weeks, average = 10 weeks; his four guinea-pigs given prophylactic as well as therapeutic inoculations died in 9–24 weeks, average = 13½ weeks.

The criteria of weight curves, survival rates, and macroscopic post-mortem appearances being applied to the experiment detailed above, no evidence of a favourable influence exerted by this diaplyte vaccine—employed curatively and in the doses recommended—on the course of tuberculosis in guinea-pigs has been observed.

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Clinical and Laboratory Notes.

STRICTURE OF ANAL CANAL FOLLOWING IMPROPER TREATMENT.

BY WILMOT ADAMS, F.R.C.S. ENG.,
SENIOR SURGEON, STRAITS SETTLEMENTS MEDICAL SERVICE.

I VENTURE to think this case may be of interest in bringing out (1) the disastrous results of unskilled treatment, and (2) the efficacy of local anæsthesia in what was practically a Whitehead's operation.

A Chinese female, aged 38, was admitted to the General Hospital, Penang, on Jan. 23rd, 1923, suffering from anal stricture.

History.—About four months previously she consulted a Chinese medicine man on account of bleeding piles. He guaranteed a cure, and his procedure was as follows. She was heavily dosed with opium and a suppository containing lime was put into the rectum and kept there by pad and strapping for four days. For the first month after this she was fairly comfortable and the optimistic quack assured her she was cured. She then began to have difficulty in the passage of motions and in the control thereof.

Condition on Admission.—The anal canal consisted of a mass of fibrous tissue extending upwards for 1 inch, the lumen of which admitted a No. 6 English catheter. She was completely incontinent and was suffering from a very marked degree of intestinal intoxication.

Operation was performed under local anæsthesia of ½ per cent. novocaine preceded by morphia and hyoscine. The stricture was removed en masse in exactly the same way as the pile-bearing area is removed in Whitehead's operation, and the cut edge of the healthy mucosa above stitched to the skin. This procedure was practically bloodless and anæsthesia was perfect, in fact the patient was sleeping during the latter part of the operation.

Recovery was uneventful. She had no incontinence even during the first few days, and left hospital in the third week with no suspicion of any further stricture developing.

I am indebted to Dr. A. L. Hoops, principal civil medical officer, Straits Settlements, for permission to publish this case.

LARGE UTERINE FIBROID REMOVED DURING PREGNANCY.

BY W. WORGER, M.R.C.S.,
SURGEON TO BURNHAM-ON-SEA WAR MEMORIAL HOSPITAL.

THE following case of removal of a large fibroid from a three-months pregnant uterus without interruption of pregnancy is of considerable interest:—

A patient, Mrs. K., was admitted into the Burnham-on-Sea War Memorial Hospital under my care on March 1st, 1924, suffering from a fibroid tumour of the uterus. Seven months previously she had first noticed an abdominal swelling, but it did not cause her any inconvenience. A month ago she had an attack of acute abdominal pain, for which she consulted my partner, who diagnosed a fibroid. Menstruation had been regular until three months ago. She was under her doctor's observation for a month, during which there was no definite increase in size in uterus or abdominal measurements. By examination on admission I found that she had a large abdominal tumour, reaching as high as the umbilicus and attached to the uterus, solid to touch, and showing no contractile movements. Uterus slightly enlarged. On operating I found a large fibroid attached to the fundus of the uterus, there being also a smaller tumour in the posterior wall of the uterus in the lower segment. The uterus was slightly enlarged and I could feel that it contained a fœtus. I decided to remove the large fibroid and preserve the uterus, and this I did without a great loss of blood. I also shelled out the smaller tumour, and closed the abdominal opening. The tumour weighed 4 pounds.

The patient made an uneventful recovery and was discharged from hospital on March 24th, 1924. She was readmitted on Sept. 2nd, 1924, and gave birth to a 6 lb. 14 oz. live male child.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

COMBINED SECTIONS OF EPIDEMIOLOGY, COMPARATIVE MEDICINE, AND DISEASES OF CHILDREN.

THE adjourned meeting of this Section (see THE LANCET, Feb. 14th) for the discussion of the CONTROL OF TUBERCULOSIS AND THE MILK-SUPPLY was held on March 2nd, Dr. JOHN MCVAIL, President of the Section of Epidemiology, being in the chair.

Dr. M. J. ROWLANDS spoke of his practical experience in pig-farming, and ascribed the liability of cattle to tuberculous infection to the two factors of bad feeding and overwork.

The Vitamin Factor.

Nowadays, he said, there was practically no vitamin-content in the diet of dairy cows, the whole of the germ was taken out, and an animal that was intended by Nature to produce sufficient milk for one calf at a time when natural vitamin-rich foods were prevalent was made to yield from one to two thousand gallons per annum, working for eight or ten months without rest. Such a drain on the fat and protein must result in a low immunity. Among his pigs tuberculosis had been very prevalent, even under the most scrupulous hygiene, but he had completely eradicated it in one year by attention to the vitamin-content of the diet, without any methods of isolation or disinfection. Almost every prize animal in a certain famous herd of cattle gave positive results with the tuberculin test, while the other members, not fed on artificial foods, showed a far smaller proportion of reactors. The rarity of tuberculosis in sheep, horses, and bullocks was to be ascribed to their more natural life. In collaboration with Dr. Chalmers Watson, of Edinburgh University, he had found that pigs fed on a vitamin-rich diet passed one-third less protein in their stools than those fed on the usual substances. He had found it important to supply animal protein, as there was a conversion loss of 25 per cent. on vegetable protein. Slaughter of all tuberculous cows in the country would give immunity for two years only; it was not possible to pull down all the cowsheds and they were full of tuberculosis; sunlight, cleanliness, segregation, and disinfection were good measures, but would not eradicate the disease. The only satisfactory method was to increase the natural immunity of the animals by providing a diet rich in carbohydrate, protein, mineral salts, and vitamins.

Pathogenicity of the Bovine Bacillus.

Dr. A. S. GRIFFITHS, speaking from the point of view of the bacteriologist, showed a number of charts illustrating the work of the bovine bacillus in human pathology. The Royal Commission of 1911 had disproved Koch's statement that this form of tuberculosis was without serious menace to man, and further investigations had served to confirm their findings. In gland tuberculosis the bovine bacillus had been found in 85 per cent. of cases under 5 years of age; in 18·2 per cent. of adults. In bone and joint tuberculosis the percentages were 30·2 and 5·9; in scrofuloderma 58·3 and 7·7; in lupus 66 and 17·6. There was evidence of a slight increase in the incidence of bovine infection since 1910. The animal form was responsible for 19 per cent. of genito-urinary tuberculosis of all ages, 1·1 per cent. of pulmonary disease (found in three cases only), and 66·6 per cent. of meningitis, taken from the cerebro-spinal fluid during life. Thus some 80 per cent. of the infections that had entered by the alimentary tract were due to the bovine bacillus. These results had served to disprove Calmette's assertion that phthisis entered via the abdominal glands, and there was no evidence that the bovine form could be converted into the human. There was no clinical distinction between surgical cases of tuberculosis in laboratory animals produced by the two varieties; and such evidence as was available pointed to a slightly higher degree of intrinsic virulence on the part of the bovine. The obvious corollary of such findings was the urgent necessity for removing tubercle bacilli from milk.

Mr. G. P. MALE expressed the disappointment experienced by certain of the veterinarians at the previous discussion on hearing the promulgation of such counsels of despair as pasteurisation and the immunising value of a few live bacilli in the milk drunk. He believed there were certain hopeful features in the situation, such as the increase in the number of farms supplying certified and grade A milk, and the reduction of the proportion of reactors in the herds from 50 per cent. 20 years ago to less than 5 per cent. at the present time. He referred to the remarkable improvement in the hygienic conditions of housing which resulted from the work of Dr. Stenhouse Williams at Reading, where it had been proved that clean milk could be produced in old buildings without material alteration, and the farmers had been satisfied that the production of such milk and the eradication of tuberculosis from their herds was a sound commercial proposition. He admitted the force of the two objections raised—viz., the increase of cost to the consumer and the danger of distributing reactors to other centres, but thought there was no reason why grade A milk could not become the staple supply of the country if only the doctors would support it. This could be sold at a profit by the addition of 1*d.* per quart to the retail price. The dissemination of reactors, also, only resulted in their becoming collected in the herds of owners who were not anxious to provide tested milk, and such herds would become known to the medical officer of the district. Mr. Male emphatically urged the reintroduction of the Tuberculosis Order: he had helped to work it during the short period it was in force and could speak to its efficacy. Its cost might be some £80,000 per annum, but the cost of sanatorium treatment for children infected with bovine tuberculosis would go a long way towards meeting that sum. In the 12 months of the Order's life over 1500 milk samples containing tubercle bacilli had been traced to their source and the animals slaughtered. There must be close coöperation between the medical officers of health and the veterinary inspectors so as to encourage in every way the production of certified or grade A milk, with regular inspection of herds once every three months.

The Farmer's Point of View.

Dr. STENHOUSE WILLIAMS spoke strongly of the distress it had caused him to hear the worst specimen of farmer held up to the meeting as a type. The Berkshire farmers had taken immense trouble to render their cows perfectly clean. The cows were brought in, washed thoroughly, and the workers then changed their coats, washed themselves and, seated on a clean stool, milked into covered sterilised buckets, which were subsequently placed into sterilised containers over sterilised coolers, and thence into a sterilised ten-gallon churn which was sealed, marked, and unventilated. The retailer in his turn put the milk into a sterilised receiver, and thence into a sterilised bottle, capped and sealed it, and it was thus delivered, fresh and clean, to the consumer's house for 1*d.* per quart extra. Dr. Stenhouse Williams quoted one such instance of a farmer who had cleared his herds at considerable financial loss, and when he then offered his milk to the local hospital at the ordinary rate his contract was refused. The dealers also refused his milk, and he had to start a dairy business at his own expense in order to get his milk on the market. Within two years it formed one-sixth of the total supply of the town. Such a story was a reproach to the medical profession, and one reason why the consumption of grade A milk was not widespread was that the doctors failed to support it. The alternative

was pasteurisation, as in New York, where it was beginning to be questioned whether the large amount of latent scurvy might not have some connexion with the high percentage of pasteurised milk. In his opinion the far better way was to support the idea of fresh, clean, tuberculin-tested grade A milk, not forgetting that this country could boast the most intelligent farmers in the world.

Importance of Expert Inspection.

Sir LAYTON BLENKINSOP agreed that the veterinarians had been much disappointed at the apparent satisfaction with pasteurisation; he had no doubt that hygienic conditions and the placing of herds under the control of practised veterinary surgeons would result in the eradication of the disease. The best help to the farmer was to give him the advice of competent clinical experience, and no one was keener to follow sound advice than the British farmer. His experience with glanders and mallein-testing in the army had led him to believe that the first essential was recognition of the symptoms of the disease. He agreed as to the necessity for urging the reintroduction of the Tuberculosis Order.

Dr. D. NABARRO said he had no doubt that herds could be freed and kept free for a time, but this freeing of them resulted in a lowering of their immunity; he was not quite convinced of the desirability of so doing, nor was he sure that small doses in milk did not confer a valuable immunity. Of course, ca es of gross udder disease or advanced tuberculosis must be slaughtered, but to destroy all reactors was going too far. He believed in the mutability of the bacillus and that the rarity of bovine infection in adults was to be accounted for by its alteration after long sojourn in the human body. He referred to the work of Collie, Beattie, and others on acid-fast bacilli which could be modified by passing through guinea-pigs into bacilli having all the characteristics of tubercle. He urged that these important results should be further investigated, and that such unsolved problems should be put to the test before the country embarked on a wholesale slaughtering of cattle.

Dr. NATHAN RAW expressed it as his opinion that practically all surgical tuberculosis was bovine and bore no relation to pulmonary disease. Some 10,000 children were lost annually through the work of this bacillus and some 5 per cent. of the million dairy cows in the country were suffering from tuberculous disease of the udder. Slaughter was no solution; the most hopeful method of attack was to immunise the calves as they were born. Until this process could be completed pasteurisation or boiling of uncertified milk should be made universal. He had never seen any ill-effects from the use of pasteurised milk. He urged that the Tuberculosis Order should be re-enforced, remarking that Parliament was anxious to take any steps that would ensure a pure milk-supply for the country. The Reading testing centre was a model for the country, but it would be some time before such a standard could be made universal.

Dr. H. SCURFIELD said that the towns which had had milk clauses in force showed no evidence of any reduction of the tuberculosis incidence. He referred to the insidious way in which the infection creeps in to free herds and asked how this was to be explained. Was it due to the fact that a cow might have an early infection which did not give a positive reaction, or was it due to the doping of animals with tuberculin? It was known that a tuberculin test rendered the animal negative to subsequent tests for a certain time. He urged the standardisation of tuberculin and the restriction of testing to competent veterinary surgeons, every cow tested to be marked in some way. He most cordially agreed with the importance of the vitamin diet, and the necessity for spreading institutes such as that of Reading over all the country. In his experience, if sufficient care were taken in following up a sample of tuberculous milk swiftly an infected udder was always found to account for it. He agreed that veterinary surgeons of clinical aptitude were necessary.

Prof. F. T. HOBDAY spoke of the seriousness of this possibility of doping cattle; any unscrupulous dealer had only to get a syringe and some tuberculin to render his cows negative to any test. There should be some control. He believed in the immunisation methods and thought they were well on the way to a successful issue. The country could be free of tuberculous cattle in 20 years by this method.

Dr. HENRY GRAY believed in total eradication as the only way of getting rid of the disease. It was not for the medical profession to consider costs and adopt tinkering methods; it was for them to say what ought to be done to prevent tuberculosis in children and for the public to determine whether it would pay the price or not. Neither housing nor vitamins would settle the difficulty; there was only one cause of the condition and that was infection.

Sir WILLIAM HAMER spoke in favour of feeding and housing methods, having reference to the remarkable results achieved by these measures among human beings.

Sir LEONARD ROGERS pointed out that all milk in India had to be boiled, and the children did very well on it. In his opinion pasteurisation was the best method until the disease could be eradicated in cattle, and grade A milk made the supply of every home.

The PRESIDENT, in concluding a good discussion, spoke of its vast importance and great interest. He deprecated any suggestion as to the existence of two sides in this matter; there was no contradiction; pasteurisation was merely a temporary precaution while the work of eradication was being completed.

A resolution calling upon the Council of the Society to urge upon the Government the immediate re-enforcement of the Tuberculosis Order was carried unanimously.

SECTION OF EPIDEMIOLOGY AND STATE MEDICINE.

Preventive Control of Diphtheria.

AT a meeting of this Section held on Feb. 26th, with Dr. JOHN MCVAIL, the President, in the chair, Dr. WILLIAM ROBERTSON, medical officer of health, Edinburgh, read a paper on the above subject. Having remarked that the usual measures with regard to diphtheria had rather the appearance of locking the stable door after the steed was stolen and referred to the anxiety given to all public health departments by the presence of carriers, Dr. Robertson described the methods adopted in Edinburgh to secure a systematic immunisation of the school population. Explanatory leaflets and consent forms were distributed to all scholars under the age of 10 years. Parents were asked to consent to a preliminary Schick testing, then, if necessary, three preventive inoculations and a final Schick testing. In the better class schools as many as 86 per cent. of the parents consented, but in the poorer districts the percentage sometimes fell to 40; when the percentage of consents was 50 or less a second appeal sometimes brought the figure up to 70. When skilled workers were employed and the coöperation of teachers secured, it was possible to make the tests at the rate of 100 to 120 an hour. It was found, as elsewhere, that the proportion of positive reactors was much higher in the better social strata. It also appeared that passing through an attack of diphtheria did not confer a lasting immunity, as judged from the Schick reaction. Experience had shown that in young children, aged 2–5, immunisation could properly be done without a preliminary Schick test. From the preventive point of view, it would be expedient to concentrate attention upon children of pre-school age. It was essential that the method should be applied only by trained persons.

Sir WILLIAM HAMER wished to have more information as to the results, in particular with regard to the New York experience.—Dr. O'BRIEN remarked that the mixture used in Edinburgh was, so far as guinea-pigs were concerned, much less toxic than that employed in New York. He referred to improvements

already effected in the production of antitoxin and looked forward to yet greater improvements.—Dr. S. MONCKTON COPEMAN remarked that in England, so far, only schools used by the wealthier classes and Poor-law schools had made much use of the method. The higher percentage of immunes in the poorer classes was apparently due to more frequent normal exposure, because, in a higher grade school in Norfolk, where there was definite exposure to risk, the proportion of negative reactors had been found to be very large.—Sir GEORGE BUCHANAN hoped that it would be possible to ascertain whether the subsequent attack-rate of the immunised children in New York was lower than that of those not immunised. He congratulated Dr. Robertson on this piece of work and inquired whether reactions on inoculation had given rise to trouble, whether it had been found necessary to warn parents.—Dr. MAJOR GREENWOOD deprecated any premature attempt to "prove" the efficacy of the process by statistics. At present the method should be regarded as a reasonable one, one to be accepted by intelligent people; in time a statistical assessment would be possible.—Dr. RANDALL asked whether immunisation had reduced the number of carriers.—Dr. TROTTER thought that the public health services in Scotland had a considerable advantage over those in England both by virtue of having somewhat greater powers and of being in closer contact with the people.—Dr. HUME thought that the small size of Edinburgh compared with London and the prestige of the medical school explained the greater willingness of the population to follow medical advice.—Dr. SCOTT thought that the variation of the proportion of natural immunes was one of the most interesting problems from the standpoint of immunology; the explanation by subinfection was not really very satisfying.—Dr. FORBES said that Edinburgh stood alone in dealing with the school population. In the south the method had been practically confined to large institutions.—Dr. REGINALD DUDFIELD remarked that, as in the matter of tuberculosis dispensaries, Edinburgh was doing pioneer work. He inquired as to the verification of a history of previous diphtheria and also asked for information on the subject of carriers.—The PRESIDENT tendered his congratulations and those of the Section to Dr. Robertson. It was difficult not to be envious of New York. Probably the medical profession required more education, and he thought that Dr. Hume's remarks on the medical atmosphere of Edinburgh were highly relevant. He also deprecated any premature statistical "proofs."

Dr. ROBERTSON, in his reply, said that it was too early to give statistical results, but in a school which had formerly given much trouble no cases had occurred amongst the immunised. It had not been found necessary to issue warnings as to reactions. There were some reactions at the age of 10–11, but they were confined to slight rises of temperature and local induration. The method was not serviceable in the elimination of carriers. Carriers did not react. Histories of alleged diphtheria were verified from notification records.

LONDON ASSOCIATION OF MEDICAL WOMEN'S FEDERATION.

A MEETING of this Association was held on Feb. 10th, Miss M. CHADBURN being in the chair.

Miss FRANCES IVENS read a paper on the

Prevention of Puerperal Morbidity and Mortality.

She had long been interested in this subject from a gynæcological standpoint, and had welcomed an opportunity to make observations from the obstetrical side to determine to what extent the morbidity, immediate and remote, following childbirth was preventable. Five years ago, with this object in view, she undertook, at the invitation of Dr. E. W. Hope, then medical officer of health of Liverpool, the supervision of the new maternity home which was started on his initiative. The home could only take in 14 patients, but since its opening in 1920 1000 admissions had taken place. As far as possible, Miss Ivens saw every case before admission and made an examination. A specimen of any abnormal discharge was sent to the city bacteriologist for report. Cases of active syphilis or gonorrhœa were referred to a special institution, and cases of albuminuria, cardiac disease, hyperemesis, &c., were admitted for antenatal care. Cases requiring Cæsarean section were sent on to the Stanley or Maternity Hospital. At this home before any internal examination is made the vulva is shaved and washed with lysol solution. In emergency cases tincture of iodine is also used. During labour all those concerned with the case wear sterilised overalls and boiled gloves. The matron or sister conducts all normal cases with the assistance of the pupil midwives, who are all trained nurses. Any perineal rupture is repaired at the earliest possible moment with silkworm-gut. The wound is kept dry and is touched once daily with tincture of iodine. During the puerperium the vulva is swabbed four-hourly during the day with lysol solution and a large sterile pad applied. The patient is encouraged to lie on her side for part of every day and to sleep in an exaggerated Sims position, which is not uncomfortable. Anteversion of the uterus is thus encouraged. In cases of ruptured perineum micturition is performed on the hands and knees so that the wound is not soiled and catheterisation is avoided. Of 1000 patients admitted 206 were pre-maternity cases and 679 were maternity cases, of which 390 were primiparæ and 289 multiparæ; 118 were postnatal cases. Miss Ivens said that there had been no maternal mortality among these cases and no maternal morbidity according to C.M.B. Rules among the cases delivered in the home.

Miss Ivens proceeded to classify the cases. Contracted pelvis occurred in 130 cases, the high percentage being probably due to the fact that a proportion of the cases were referred from outside clinics, doctors, and midwives for special observation and care. Of the total number of maternity cases (679), natural delivery took place in 601—88 per cent. Among the complications met with were post-partum hæmorrhage (three severe and two slight), adherent placenta, perineal tears, fibro-myomata, twin births (eight pairs), unreduced occipito-posterior position, placenta prævia (eight cases), prolapse of cord, pelvic presentations (25 cases), face presentations (two), eclampsia (one as an emergency). Induction of premature labour was employed in 48 cases. Delivery by forceps was effected in 30 cases and 29 patients required Cæsarean section. As to the infants, 39 were stillborn or died in the first ten days, of which 22 were premature; 687 children were born and 648 remained alive. Miss Ivens described 11 cases where there had been some morbidity. Full details of this investigation would shortly be published.

She recognised that it was unwise to draw definite conclusions from such a small number of cases, but she was inclined to believe that the results led to the following among other conclusions: That latent or pre-existing infection is responsible for a considerable percentage of cases of puerperal sepsis; that the organism may not infrequently be isolated from the urine during pregnancy; that intermittent albuminuria during pregnancy is an indication for bacteriological examination of the urine; that cases should be removed from unsuitable surroundings and accommodation in homes should be sufficiently ample for patients to be admitted a day or two before labour is anticipated; that rigidly aseptic technique is important; that well-trained midwives can deliver a very high percentage of maternity cases if efficient antenatal care has been given and if skilled medical help and, if necessary, institutional treatment can be obtained when required; that in view of the need for study of the origin and character of the infecting organism in cases of fulminating puerperal fever

such cases should be placed at the earliest possible moment under the care of an obstetrical specialist and a bacteriologist.

Discussion.

DR. VIOLET RUSSELL spoke of the technique adopted in private cases. She emphasised the need for efficient sterilisation of (1) the surgeon's hands, (2) the patient's body; she held that gloves should always be used and did not consider that swabbing was much good. The vulva, the vagina, and cervix should be generously painted with tincture of iodine.

Dr. E. PHELPS spoke of the gap between conditions in the practice of specialists and those which obtained in, for example, the East-End of London.

Lady BARRETT said she was specially interested in the cases described by Miss Ivens where there was a pre-existing focus of infection. She was drifting away from the theory that wound infection was the most important cause of puerperium sepsis. The factors which had to be thought of were (1) the focus in the mother, (2) low resistance in the mother, and (3) infection by attendant. A mask might be a more important preventive than a gown. She was not certain that the banished theory of air infection would not have to be revived in view of certain recent experiences of her own.

Miss I. MANN asked what routine prophylaxis was adopted by Miss Ivens against ophthalmia neonatorum.

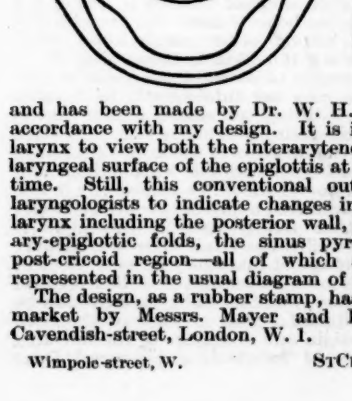
Dr. GLADYS SANDES asked whether the cases of gonorrhœa admitted to the home had had any previous treatment.

Miss IVENS briefly replied. Boracic lotion only was used as a routine measure for the infant's eyes and argyrol in suspicious cases. Cases known to have gonorrhœa were not admitted, therefore most of the admitted cases had not been treated.

New Inventions.

OUTLINE DIAGRAM OF THE LARYNX: RUBBER STAMP.

THE conventional diagram of the larynx has descended to us from the early days when the chief interest of a laryngeal case was "to see the cords" and anything growing thereon. This diagram was particularly unsatisfactory for displaying the interary-tenoid region which, with the neighbouring area above each vocal process, is the most frequent site for the deposit of tubercle. The outline drawing here figured is, of course, semi-diagrammatic



and has been made by Dr. W. H. Smurthwaite in accordance with my design. It is impossible in the larynx to view both the interarytenoid region and the laryngeal surface of the epiglottis at one and the same time. Still, this conventional outline will enable laryngologists to indicate changes in any part of the larynx including the posterior wall, both sides of the ary-epiglottic folds, the sinus pyriformis, and the post-cricoid region—all of which are inadequately represented in the usual diagram of the larynx.

The design, as a rubber stamp, has been put on the market by Messrs. Mayer and Phelps, 58, New Cavendish-street, London, W. 1.

Wimpole-street, W. STCLAIR THOMSON.

Reviews and Notices of Books.

LEPROSY.

By Sir LEONARD ROGERS, C.I.E., M.D., F.R.C.P., F.R.C.S., F.R.S., I.M.S. (ret.), Physician and Lecturer, London School of Tropical Medicine; late Professor of Pathology, Calcutta Medical College; and ERNEST MUIR, M.D., F.R.C.S. Edin., Research Worker in Leprosy at the School of Tropical Medicine and Hygiene, Calcutta. Bristol: John Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd. 1925. Pp. 301. 12*s.* 6*d.*

THE appearance of this book marks a definite advance in our knowledge of an ancient and loathsome disease. The subject-matter shows evidence of a great amount of research, historical and statistical, the two being woven into one continuous story. The first section deals with the history and distribution of leprosy; it gives the ancient records, and describes the spread throughout Europe, the subsequent decline, and later the invasion of the Pacific islands. The distribution of leprosy is a subject to which Sir Leonard Rogers has devoted much study, so that his recent views on the incidence in relation to rainfall and latitude will receive careful consideration. The second section of the book concerns epidemiology and communicability, many instances being given from the literature in which the source of infection has been definitely ascertained. The third section details the various prophylactic measures adopted in historical and recent times, and will be read with special interest as affording an indication of the value of strict and compulsory segregation in stamping out leprosy.

The clinical section is illustrated with a series of excellent photographs, and constitutes a valuable contribution to the symptomatology of leprosy. But it is to the last section that the majority of readers will turn most eagerly, and here they will find a moderate and maturely considered opinion on the results of treatment already obtained. Research in methods of administering the oils of chaulmoogra has culminated in the injection of the esters of hydnocarpus oil by infiltration of the subcutaneous tissues. Stress is wisely laid upon the importance of selecting suitable cases for treatment, and the desirability of warning the patient from the outset that care must be protracted, and that the chances of final recovery depend upon the energy and persistence with which he carries out his part. Some of the photographs which illustrate the effects of specific treatment are impressive.

This book is the outcome of painstaking labour. The search through the literature necessary to compile a record of 700 cases in which the probable source of infection was traced, as tabulated in Table IX., must have consumed an immense amount of time. The style is clear and the teaching is free from personal bias. It is likely that it will remain the standard work on this subject for many years to come.

SURGERY.

A Manual of Surgery. ("Rose and Carless.") Eleventh edit. By ALBERT CARLESS, C.B.E., M.B., M.S. Lond., F.R.C.S., Emeritus Professor of Surgery, King's College, London; Consulting Surgeon, King's College Hospital. Assisted by CECIL P. G. WAKELEY, F.R.C.S., Assistant Surgeon and Lecturer in Clinical Surgery, King's College Hospital. London: Baillière, Tindall and Cox. 1924. Pp. 1570. With a Radiographic Supplement. 30*s.*

THAT this old-established manual of surgery continues to fill a definite requirement of practitioners and students is shown by the frequent calls for a new edition. In the latest revision Mr. Carless has been

assisted by Mr. C. P. G. Wakeley. The work seems to have been done as carefully as heretofore, recent changes in surgical opinion and practice being recorded with the same discrimination and balance. By giving just the right amount of information on any particular subject the authors have been able to accomplish the almost impossible task of compressing modern surgical teaching into a single volume of moderate compass. "Rose and Carless" seems to possess the secret of perpetual rejuvenation.

Handbook of Operative Surgery. Fourth edition. By Sir WILLIAM I. DE C. WHEELER, B.A., M.D., F.R.C.S.I., F.A.C.S., Surgeon to Mercer's Hospital and the National Children's Hospital, Dublin. London: Baillière, Tindall and Cox. 1925. Pp. 441. 15*s*.

IN this, the fourth, edition of Sir William Wheeler's well-known handbook a thorough revision has taken place and a number of alterations have been made. Obsolete operations have been omitted and new matter dealt with. The book has attractive features and has a personal note not always seen in small text-books of its kind; a number of useful practical hints are scattered through the descriptions of routine operations. The newer methods of using local anæsthetics are mentioned, but the description of such procedures as sacral anæsthesia is not sufficiently exact for practical application; the same applies to the accounts of brachial plexus and splanchnic anæsthesia. Colonic ether anæsthesia appears to be used extensively in the author's practice. The objections from the surgeon's point of view to the high temperatures at which theatres are kept are emphasised, but one would like to see the necessity for conserving the patient's heat equally stressed. An account of the technique of blood transfusion is included. There is a curious omission of intratracheal anæsthesia as an aid to operations on the neck and mouth. The author still recommends laryngotomy in these cases. The script is worthy of illustrations of a higher order. Some of them are quite devoid of artistic merit, and, indeed, a few of them, as that on p. 117, are crude.

Altogether, this is a useful little volume and it will continue to be valued by students preparing for examinations.

Practical Surgery Illustrated. By VICTOR PAUCHET. Translated by F. R. B. ATKINSON, M.D., C.M. Edin. With an introduction by Sir CHARLES GORDON-WATSON, C.M.G., F.R.C.S., Surgeon and Joint Lecturer in Surgery, St. Bartholomew's Hospital. London: Ernest Benn, Ltd. 1925. Vol. III. Pp. 248. 18*s*. 6*d*. Vol. IV. Pp. 255. 15*s*.

THESE volumes follow the general plan of Parts I. and II. which have already been reviewed in our columns. It would have been more satisfactory if the sections dealing with one particular disease had been collected together. For instance, femoral hernia was treated in one of the earlier volumes and the operation above Poupart's ligament alone described, whereas in Vol. IV. we get a full account of the inguinal operation. Again, the chapters on gastric surgery are scattered through the four volumes. In Vol. III. there is a very good account of radicotomy, by J. A. Sicard and M. Robineau. The treatment of fractures by open operation is considered by Dujarier. This section does not come up to the standard of the rest of the work, as the author only treats of the matter in general and gives no details. The rest of the volume is written by Pauchet. He deals with cancer of the tongue, goitres, gastric and duodenal ulcers, tumours of the large intestine, and adenoma of the prostate. In cancer of the tongue he describes only one operation—the intrabuccal method. He recommends, however, that the kind of operation performed should depend upon the situation of the growth. He believes that in the future radium will be used much more extensively than at present, but that now preference ought still to be given to surgical treatment without delay. The chapter on goitre is well illustrated. On carcinoma of the colon the author is at his best. The section on suprapubic prostatectomy is not of the same excellence. The fourth volume is a very good series of pictures illustrating operations upon the subjects treated therein. There is described an approach to the shoulder-joint through the axilla with which surgeons in this country may not be familiar. Good accounts are given of gall-bladder surgery and colostomy. In carcinoma of the breast the author removes the breast first and the axillary contents last, contrary to the usual British practice. He advises against very large incisions for exploring the abdomen; we agree that it is better to make one in the epigastrium and a separate one in the lower abdomen if necessary. The fourth volume is ill translated. The translator uses peculiar methods of construction and unusual words, and there are mistakes all through. For example, the followin, sentence appears on p. 178: "In amœbic dysentery, the mucosa presents a lunar appearance, with ulcerations in the form of a crater, a kind of substance with edges cut perpendicularly and often absent at the base, that two craters may be united by sliding a thread over the two bases of the ulceration." It is a pity that the work of a great surgeon should be thus mutilated.

SYMBOLISM OF THE THREE DEGREES.

By OLIVER DAY STREET. London: George Allen and Unwin. 1924. Pp. 195. 8*s*. 6*d*.

THIS is a work primarily written for Freemasons, but it is also of much interest to those who are not members of the Craft, for symbolism enters into daily life, and itself preserves ideas and customs which go back to the dawn of history. The Three Degrees are those of the Entered Apprentice, the Fellow Craft, and the Master Mason. Mr. Street gives a clear account of the meaning of the symbolism underlying these degrees. Masonic symbolism has incorporated and adapted much symbolism originally used with a somewhat different meaning; or, rather, the symbols of Masonry are like the different interpretations of the Scriptures—the literal, the allegorical, the tropological, and the anagogical. For instance, the square and the circle are two very ancient symbols which originally meant the world and the heavens. The ideal building and many early buildings were representations of the visible world and therefore planned square with a hemispherical roof. Owing to structural difficulties this ideal was not realised until the building of Santa Sophia, the first building in which a dome was correctly superimposed upon a square by the invention of pendentives. In Masonry the square represents the lodge, which is again symbolical of the world, and its covering is a "clouded canopy" (pp. 26 and 59). But in another sense the square represents morality or uprightness. Circumambulation again was originally a representation of the sun's apparent daily course. To go the opposite way—i.e., "widdershins"—meant death or something evil. So ecclesiastical processions always go from the east by way of the south aisle, except on penitential occasions, when they go by way of the north aisle, and even he who is least acquainted with symbolism knows that the bottle must be passed with the sun. Finally, we may recall the historic triangular duel between Mr. Biggs, Mr. Easthupp, and Mr. Midshipman Easy, when the gunner, who was consulted on points of procedure, replied with unerring intuition that in his opinion "they should fire with the sun." The science of numbers upon which Mr. Street discourses learnedly has always been of great importance in mystical lore. To give one example, the number of fishes taken in the miraculous draft mentioned in

St. John's Gospel, chap. xxi., was 153. These fishes are explained as the whole congregation of the elect, for ten stands for the Law and seven for the works of the Spirit; 10 + 7 = 17, i.e., the fulfilment of the Law by the Spirit. Sum the progression 1 + 2 + 3 + 4 . . . . . + 16 + 17, and the total is 153. So in Masonry we find the steps of the Winding Stair in sets of 3, 5, 7, all odd numbers adding up to 15, another odd number going back to the 15 steps of Solomon's Temple and the 15 Songs of Degrees.

To the many medical men who are Masons we cordially recommend this book; others who are not Masons will profit by reading it also.

EVOLUTION.

Living Organisms. An Account of their Origin and Evolution. By E. S. GOODRICH. London: Oxford University Press. 1924. Pp. 200. 6*s*.

AN admirable, and not the commonest, portrait of Darwin forms an appropriate frontispiece to a volume in which the Linacre professor shows how the great truths of Victorian comparative anatomy and evolutionary theory are illuminated, expanded, and confirmed, but never weakened or invalidated, by the newer knowledge. The chapters deal with the nature of life, reproduction and death, Darwinism and heredity, variation and the factors of inheritance, natural selection, isolation and sexual selection, phylogeny, the geological record, and psychological evolution. The treatment is close and in parts careful reading is necessary, but it is really a pleasure to come across an introductory book for adults which makes no pretence that difficult things are easy to understand and does not try to apply a Montessori method. Whether the "general reader" of the preface will be able to follow it all without more technical equipment than he generally has is rather doubtful. The book seems more suitable for students who have done an elementary course of zoology and botany, and we know of no better book to make them think; it will be excellent, too, for those whose formal instruction dates from last century, for medical men, for instance, who are in fact deeply concerned with the modern progress of biology and to whom it is too often represented in miraculous snippets, or as utterly subversive of what they grew up with. It would also, perhaps, be a useful discipline for some of the modern followers of genetics and such like who are apt to think that their new terminology has wiped out the older knowledge. The book is, in short, a sound scholarly attempt to get people to think accurately about evolution and heredity; it should meet with considerable success.

TUBERCULOSIS AND POSTURE.

Evolution de la tuberculose pulmonaire chronique dans ses rapports avec la circulation générale et locale. La cure déclive. By Dr. PIERRE COLOMBAN. Preface by Dr. DUMAREST. Paris: Masson et Cie. 1924. Pp. 228. Fr.12.

THIS monograph is a plea for the postural treatment of pulmonary tuberculosis. Since 1919 the author has been systematically treating his patients by devices intended to promote congestion of the apices of the lungs, or at least to render them less anæmic. The couches and beds on which his patients lie are tilted at angles calculated, it would seem, to flush the head and neck as well as the apices of the lungs with blood. Most of the patients found suitable for this treatment were women, the author having discovered that they adapt themselves more readily than men to postures which, however salubrious, are apt soon to become most uncomfortable. It is doubtful if the author has brought forward a single new argument in favour of a system of treatment which was the vogue more than a decade ago in certain institutions. His book is, however, useful as a fairly comprehensive summary of the many arguments adduced from time to time in favour of the view that man, in changing from the horizontal to the upright posture in the course of his evolution, has paid for this change with anæmic apices to his lungs. The inevitable corollary to this view, according to the author, is that man must, at any rate temporarily, return to the posture of his remote ancestors. It is difficult to picture the "missing link" tacitly submitting to some of the postures shown in the illustrations with which the text of this book is enlivened.

Reports and Analytical Records.

OUD'S ADVOCAAT.

(WED. G. OUD AND CO., PURMEREND, HOLLAND. AGENTS FOR THE UNITED KINGDOM: G. IDLE, CHAPMAN AND CO., LTD., 65, LOWER THAMES-STREET, E.C. 3.)

THIS is a thick yellow liqueur tonic having a pleasant flavour suggestive of a sweetened mixture of egg and brandy. When analysed the following results were obtained:—

Alcohol	14·4 per cent. by weight (equivalent to 31·1 of proof spirit).
Total solids	37·3 per cent.
Consisting of—	
Sugar	22·1 ,,
Gums, &c. . ..	2·0 ,,
Protein	3·3 ,,
Ether soluble matter (fats, &c.)	2·73 ,,
Ash	0·16 ,,

These figures are consistent with a composition of:—

Egg in natural condition	25 per cent.
The equivalent of brandy of 30 U.P. ..	50 ,,
Sugar	23 ,,
Gum, &c.	2 ,,

Salicylates, benzoates, borates and sulphites were tested for with negative results.

Advocaat, as will be seen from this analysis, is a nutritious preparation of brandy, sugar, and egg in the form of a stable and homogeneous emulsion. The trouble saved by beating eggs and mixing with sugar and brandy, and the absence of preservatives, render Advocaat a useful and palatable food tonic which is available at all times.

MORUETTE COD-LIVER OIL TABLETS.

(MESSRS. ARTHUR H. COX AND CO., MANUFACTURING CHEMISTS, BRIGHTON.)

We have received a sample of Moruette Cod-liver Oil Extract in tablet form in the convenient little cases in which the preparation is distributed. The value of cod-liver oil as a medicine needs no insistence; if the claims made for it have been too wide in some directions and too high in others, there is no doubt that cod-liver oil is a most valuable substance in the hands of the physician, who has, however, found that the nauseous properties sometimes interfere with the efficacy. Consequently much ingenuity has been employed by chemists to provide palatable forms for the administration of the drug, and these tablets are made from the extractive only. They possess the vitamins and cholesterol content, the susceptibility of these bodies to heat having been provided for in the preparation of the extractive. The extractive is said to enjoy considerable popularity on the continent, but in England it is as yet not often prescribed.

OSYL ANTISEPTIC SHAVING-CREAM.

(LYSOL LIMITED, LONDON, S.W. 20.)

This firm has sent us a preparation of shaving-cream put up in a well-made screw-topped collapsible tube. It need hardly be said that a shaving preparation based on lysol, with its qualities as an antiseptic and solvent of grease, has two great things to recommend it; a third recommendation may here be mentioned—application of hot or cold water produces a copious lather almost immediately.

THE LANCET.

LONDON: SATURDAY, MARCH 7, 1925.

THE LONDON INSURANCE COMMITTEE: A SAD IMPASSE.

IT must be known to many of our readers that the Medical Service Subcommittee of the London Insurance Committee has withdrawn from the deliberations of the Committee. This means that the important and delicate duty of dealing with the complaints which arise among a million and a half insured persons in the County of London remains in abeyance, and we need hardly say that a position like this, lasting for three months, is acting as a terrible clog upon work. There are, for example, 15 complaints ready now for hearing, while twice that number of cases are in an early stage of preparation, and no meeting at which the merits of the cases may be adjudicated upon can be held unless there are present at least one medical man and one representative of the insured persons. Thus the absence from the meetings of the medical members, who no doubt are abstaining at the instance of, or with the approval of, those who appointed them to their duties, holds up the work of the Subcommittee till further notice.

We have called this position a sad impasse because it has arisen in circumstances from which at first sight no escape seems to be provided; but we refuse to believe that a working solution of the difficulties will not be forthcoming without delay, when the grave responsibility lying on all concerned is recognised, and the danger of the existing inaction is realised. Without going into minutiæ, or even details, the position has arisen in the following manner. The medical members of the Subcommittee desired to work under a new chairman, believing that the present occupant of the chair does not, from their point of view, exercise full impartiality. The laymen of the Subcommittee, resenting what they consider an unjust imputation, have refused to be nominated in succession to their present chairman, who therefore remains in his old position, which he has occupied for a considerable period. The medical members of the Subcommittee in their turn resent the appearance of having acted without due motive, and are especially sore at the imputation that the chairman has become personally distasteful to them because he is too alert to prevent them from protecting medical practitioners during the hearing of complaints. So the chairman will not resign, for that would look like a confession of failure, and the medical members will not sit under him, while without their presence complaints cannot be heard. To us it seems clear that the situation ought not to be beyond the aids of statesmanship and courtesy on each side, while both these qualities should be exercised at once on behalf of an enormous insured population. The Ministry of Health must otherwise be called in to adjust matters, while a far pleasanter milieu for the future would be created if the various persons concerned could come to an agreement on their own initiative. The first step to such an agreement must be the withdrawal of recriminations, and where there are categorical instances in which the chairman has appeared to show bias they should be frankly stated and equally frank explanations should be forthcoming. If this procedure were adopted surely one of two things would occur—either the neutral section of the Subcommittee, in whom the election is vested, would admit the justice of the view of the medical men, and allow one of themselves to be put forward as chairman, or the medical members, listening to the considered explanations of the chairman as to his conduct in particular matters, would consent again to attend the meetings. And if unfortunately none of these things occurred the Ministry of Health could then be asked to intervene. We know that the Ministry has official cognisance of the whole matter, and already some official steps may have been taken.

BISMUTH THERAPY IN SYPHILIS.

THE value and limitations of bismuth therapy in syphilis is the subject of a review by Dr. E. T. BURKE in the first number of a new quarterly journal entitled the *British Journal of Venereal Diseases*.[1] Numerous insoluble preparations of bismuth in aqueous or in oily suspension, as well as soluble preparations, have been placed on the market by chemical manufacturers in recent years and their specific value in syphilis has been much discussed. Dr. BURKE summarises in simple words the conclusions which LEVADITI has arrived at after a great deal of work on the pharmacology of the chemical group which includes arsenic, antimony, vanadium, and bismuth. These substances are alike in the fact that, while the parasiticidal power of their salts in simple solution in vitro is zero, when combined with certain tissue extracts they exert a destructive action upon protozoal organisms. Bismuth, whether in metallic form or in the form of salts, is an inert substance which can be changed by some constituent of the tissues, known for convenience as bismogene, into a new compound of unknown constitution called bismoxyl, and in this form is of high therapeutic value. From experimental evidence it would appear that bismuth compounds must be reduced to elemental bismuth before bismogene can act and give rise to bismoxyl; but Dr. BURKE prophesies that in the near future means will be found to administer bismoxyl directly to the patient instead of, as at present, depending on his own tissues for an activating substance. For the moment, however, the choice lies between the soluble and the insoluble forms of bismuth at present available for therapeutic purposes. Dr. BURKE holds that the soluble salts possess certain practical disadvantages; on account of their rapid absorption they are liable to cause toxic effects; and, owing to their equally rapid elimination, their therapeutic value is diminished. Moreover, after their use stomatitis, nephritis, and painful nodosities at the site of injection are apt to occur. Injection of insoluble preparations suspended in oil gives little pain, but the rate of absorption is slow. Metallic bismuth in very fine subdivision is painless when injected, the rate of absorption is satisfactory, and nodosities are as rare as are any untoward effects of a toxic character. Further, since reduced bismuth is necessary for the production of bismoxyl, this is clearly the most scientific form in which to administer the element. The injection of metallic bismuth, rather than one of its compounds, is a stage nearer to the giving of already prepared bismoxyl, and in Dr. BURKE'S experience the results are better and are more quickly obtained with metallic bismuth than with any other preparation. Exactly

[1] The British Journal of Venereal Diseases. Edited by L. W. Harrison and E. R. T. Clarkson, with 13 sectional editors. London: Constable. Published by the Council of the Medical Society for the Study of Venereal Diseases.

similar conclusions were reached by LEVADITI, who now uses neo-trépol, a suspension of metallic bismuth in isotonic saline.

Dr. BURKE'S treatment of a patient caught at the primary stage extends over 24 weeks—eight weeks during which stabilarsan is injected once weekly, followed by four weeks of bismuth therapy in the form of injections of metallic bismuth (bismostab) three times a week. This 12 weeks' course is then repeated without any interval. Reliance is placed chiefly on arsenic for the rapid healing of superficial lesions. Alternate rather than concurrent courses are the rule, since the spirochætes must not be allowed to acquire such familiarity with either drug as may breed contempt for its lethal powers. The absence of mercury from this programme will be noticed. Dr. BURKE states boldly his opinion that mercury has become obsolete in the treatment of syphilis. He assesses the potency of the three specifics in the order, arsenic, bismuth, mercury, as 10 : 8 : 3. It is clear that in Wassermann-fast cases, or in those which exhibit intolerance to arsenobenzol, bismuth is the drug of election. Dr. BURKE enumerates and classifies the various preparations of bismuth on the market, gives reasons for his preferences, and includes a detailed account of a technique designed to spare the patient the gluteal pain or general discomfort which may follow intramuscular injection in inexpert hands. This part of Dr. BURKE'S survey, which is based on an extensive personal experience of bismuth therapy, will be found valuable. In an article ambitiously labelled "a critical review," however, a more detailed reference to the literature in the appended bibliography would have been welcome. No mention is made of the excellent monograph by LEVADITI and NICOLAU (*Annales de l'Institut Pasteur*, 1924, xxxviii., 179) wherein all the original experiments on bismoxyl are described; those readers who are interested in this fascinating subject from the theoretical standpoint will do well to consult this monograph, as also the summary of the growth of bismuth therapy contributed to our columns by LEVADITI himself two years ago.[2]

To the same journal, which is rich in articles of direct clinical as well as scientific interest, Dr. SVEND LOMHOLT, from the Finsen Light Institute, Copenhagen, contributes notes on the pharmacology of bismuth with a similar reference. He has less scorn for mercury than is exhibited by Dr. BURKE, admitting that possibly the therapeutic effect of bismuth may be slightly less than that of strong mercurial treatment, but he contends that bismuth is better tolerated and is more convenient to use. In his view the principal objection to its use is that it may give rise to the formation of a typical blue line at the margin of the gums, and, though this causes no discomfort, patients may object to the risk of being thus branded. Prevention of this discolouration is thus of paramount importance. When preparations are used which are absorbed slowly, the bismuth line may develop and increase in strength for some time after the administration of the drug has been stopped. For this and other more important reasons, such as the prevention of toxæmia, Dr. LOMHOLT holds, in contradistinction to Dr. BURKE, that the preparation chosen should be quickly and regularly absorbed and quickly eliminated, while the selection should also be influenced by the degree of pain and discomfort caused after injection. Since the rate and regularity of the elimination of any preparation varies directly with its rate and regularity of absorption, Dr. LOMHOLT conceived the idea of examining the excretions for bismuth in a number of patients under treatment. He examined various preparations, first in oily and then in watery suspension, and came to the conclusion that watery suspensions or solutions must be preferred for practical use, and that of various compounds examined bismuth hydroxide suspended in water, to which a small amount of glycerine is added for the sake of stability, was the most suitable drug. He adds details of the simple laboratory method of preparing bismuth hydroxide which has given every satisfaction in his hands. Bismuth in metallic form was not among the preparations investigated by LOMHOLT.

The conclusions of different observers of the action of a drug comparatively new in the therapeutics of syphilis are likely enough to vary, inasmuch as each sees this complex medico-sociological problem from a different view-point. The related questions of convenience of administration, of pain after injection, of concealment of the nature of the disease, of the length of the period of treatment are matters which depend on the class and circumstances of the patient as well as on the bias of the practitioner; these and many other factors may have a bearing on the preparation of bismuth or any other drug chosen as a routine. In this connexion it may be emphasised that arsenic still holds the premier place in the treatment of syphilis, and it would appear possible that the most important function of bismuth is to kill off those spirochætes which have become immune to arsenic. In a sympathetic introduction to this first issue of a new venture in medical journalism Sir HUMPHRY ROLLESTON notes that critical reviews will be a feature of each quarterly number. We suggest that a review of new developments in arsenic therapy, in the light of FOURNIER'S and FOURNEAUX'S discovery of acetyl oxyamino phenyl arsenic acid would be appreciated by many practitioners. This substance, known as 190 or stovarsol, when given by the mouth within five hours of exposure to infection is said to protect against syphilis, and LEVADITI, in an address before a Conference at the Institut Pasteur in April, 1923, said that it possessed "une valeur demonstrative incontestable." Little is heard of this body in England, yet clinical trials abroad would seem to show that it marks a more profound advance in the therapeutics of syphilis than any preparation hitherto produced.

[2] THE LANCET, 1923, i., 639.

MENTAL DEFECTIVES IN PRISONS.

IT is to be hoped that Parliament will some time take steps to amend the Mental Deficiency Act in the manner proposed in the Report of the Prisons Commissioners for the year 1923–24 (1925, Cmd. 2307). The Act of 1913, it will be remembered, begins by separately defining four classes of defectives—namely, idiots, imbeciles, feeble-minded persons, and moral imbeciles. In the case of the first three of these classes the definition requires proof that the mental deficiency has existed "from birth or from an early age"; in the fourth class the permanent mental defect of the moral imbecile must have been displayed "from an early age." The inclusion in the Act of the words which we have quoted has the unfortunate effect that many defectives cannot be certified and admitted into an institution even where the defect is plain. As the medical officer of Holloway Prison points out, for example, it is often impossible to ascertain the early history of the elderly debilitated women who are received at his prison, many of whom have a great number of previous convictions. These unhappy men and women too often find their

way into the population of our prisons to the detriment both of themselves and of the community. The Commissioners state clearly and unanswerably that prison life is the wrong environment. Persons whose mentality is not normal yet who are technically not certifiable are not amenable to full prison discipline and can derive no benefit from prison training; at the same time their presence is an obstacle to the training of the normal prisoner. As a temporary arrangement the Commissioners are assembling persons of this type (where the sentences are of sufficient length to justify transfer) at certain prisons where they will be located together and receive the kind of treatment appropriate to their condition. It is explained, however, that this is merely a palliative measure. Prison resources are not available to deal with the problem properly. Parliament must meet the difficulty. The admirable extracts of the views of medical officers of particular prisons (appended as usual to the Commissioner's annual report) emphasise the fact that the Mental Deficiency Act must be amended. The prison doctors at Holloway, Manchester, Norwich, and Preston speak specifically of the results of this difficulty of certification. The medical officers' commentaries are always interesting and often challenging. We notice in connexion with "moral imbeciles" some robust remarks from the doctor at Wormwood Scrubs, who criticises the belief in the irresponsibility of such offenders—a belief which he attributes to the philosophical doctrine of determinism. The Wandsworth Prison doctor observes that the solution of the problem of what to do with the "criminally mentally unstable and people with a criminal kink" cannot be found "until there is a fundamental change in the present incomprehensible attitude of sympathy for the prisoners and forgetfulness of those who have suffered by their being at large."

From Manchester comes a proper condemnation of the practice of magistrates who sentence a prisoner to a term of imprisonment and then ask that his mental condition be kept under the observation of the medical officer of the prison. It is obvious that, in cases where an accused person's mental state is in question, there should be a remand for the necessary observation and report before conviction and not after. It is satisfactory that the Commissioners can say that there has been less difficulty than in previous periods in finding accommodation in institutions for certified defectives; the certified cases thus have a shorter period to remain in prison before removal. Another commendable feature of the report on a matter of general public health is the concurrence of medical opinion, especially from the prisons of Birmingham, Holloway, Hull, and Leeds, as to the noticeable diminution in venereal disease. There is, as the medical officer at Birmingham truly observes, a vast amount of valuable clinical material in our prisons which is at present wasted for lack of research workers.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—The annual general meeting of this association will be held at 1, Wimpole-street, London, W., on Wednesday, March 18th, at 5.15 P.M. At 6 P.M. on the same day a discussion on Post-graduate Teaching in London will be held, when Sir Arbuthnot Lane, President of the Fellowship, will preside. All members of the medical profession are asked to attend and to give their criticisms of the existing Fellowship arrangements and suggestions for their improvement. On Wednesday, March 11th, Mr. Oswald Addison will lecture for the Fellowship on Cleft Palate at 1, Wimpole-street, at 5.30 P.M. Copies of the syllabus of the special courses, together with the Fellowship Bulletin, will be sent on application to the Secretary to the Fellowship, at 1, Wimpole-street.

Annotations.

"Ne quid nimis."

THE BOARD OF CONTROL.

SOLICITUDE for the insane, when it has not found expression in destructive abuse of an ill-defined "system" of lunacy administration, has in recent times taken the form of a critical observation of the activities, actual and potential, of the Board of Control. The clamorous and contradictory demands that reach us from various quarters for the extension, the curtailment, or the abolition of the powers of the Board suggest that many medical men are unfamiliar with the respective duties and limitations of the various authorities charged with the control of the life and property of persons deemed incapable of taking care of themselves. The Board of Control is generally known and accepted as the central authority for mental disorders, and is thus a convenient target for criticism. The two other Government departments concerned in lunacy matters in England are the office of the Master in Lunacy and that of the Lord Chancellor's Visitors. A third department—the Home Office—is involved in the case of the insane criminal. In order to appreciate this complex arrangement it must be remembered that, apart from the insane criminal, development has taken place along two distinct lines. Authority was at first concerned only with the property of the insane. The care and treatment of patients is a much later development in the historical sense. In feudal times the land held by persons unable to perform their duties by reason of mental defect or disorder no doubt reverted to the feudal lord who found a more suitable tenant. As far back as the reign of Edward I. we find the Crown claiming an interest in the property of idiots and persons of unsound mind. The Royal prerogative became established, and exists to-day in the clearly-defined powers of the Lord Chancellor, and the offices of the Master in Lunacy and the Lord Chancellor's Visitors. The Master now administers the estates of persons of unsound mind, where proper application is made. The Visitors have special duties in visiting, and reporting on the care and comfort of those whose affairs are in the hands of the Master, and the diminishing number of patients found insane by inquisition. These two offices are distinct one from the other, though a united Board meeting is held monthly. Moreover, both are distinct from the Board of Control, a fact which produces confusion in visitation and reports concerning patients. For example, one of the medical Visitors of the Lord Chancellor may arrive to visit a patient on the same day as a Commissioner of the Board of Control; and the Master may ask the medical officer of an institution to report on the mental and physical health of a patient concerning whom a full report has just been transmitted to the Board of Control. Were it possible to amalgamate these offices, so that information concerning patients would be common to all, visitation would be simplified and unnecessary reports abolished. Such amalgamation has been attempted on three occasions, but without result, although the step has received the support of at least one of the Masters in Lunacy, and no doubt would be welcomed by the Board of Control.

The authority for the care and treatment of patients is the Board of Control. Its name is not perhaps well chosen, being reminiscent of liquor control or a railway commission; the term Board of Mental Health has been put forward as a more suitable description. The Board had its origin in 1774, when the Royal College of Physicians of London was appointed to exercise statutory functions in connexion with lunacy. Thus the nucleus of a central authority was formed, and later legislation finally established the Commissioners in Lunacy in 1845 as an autonomous body. The first chairman

was the seventh Earl of Shaftesbury who did so much to promote the proper care of persons suffering from mental illness. This Commission existed until 1913, when the Board of Control was constituted by the Mental Deficiency Act. The Board is a corporate body with a common seal, and consists of not more than 15 Commissioners, of whom not more than 12 are paid. At least four are medical practitioners, and four are lawyers; one of the paid and one of the unpaid Commissioners must be a woman. The legal Commissioners are appointed by the Lord Chancellor, and the others by the Minister of Health, who appoints the chairman. There are also four inspectors, one being a woman, appointed by the Board and approved by the Minister of Health, all being paid, though at a lower rate than the Commissioners. This Board, in addition to its duties concerning mental disorders, has the supervision of mental defectives of all classes, whether housed in institutions or elsewhere. An affiliation with the Ministry of Health took place in 1920 by an Order in Council, whereby the powers and duties of the Home Secretary under the Lunacy and Mental Deficiency Acts were transferred to the Minister of Health who represents the Board in Parliament. The Board publishes annual reports of its work, volumes which contain valuable statistics, and much detailed information of the visitations carried out during the year. These reports might be more widely read with advantage, especially by those who seek to attribute deficiencies in accommodation, staffing, or diet in public mental hospitals to neglect on the part of the Board. Year after year in some counties and boroughs the attention of the local authority is drawn to manifest defects in the hospitals under their care, and recommendations are made which the central authority is not able to enforce. The Board is an advisory and not an executive body in respect to public mental hospitals, and of the many proposals that have been made with the object of strengthening the central authority none is more likely to lead to good results than an extension of its powers in this direction. Until the central authority is in a position to insist on improvements to buildings, and on reforms in other important departments, progress will be slow, and any suggestions from medical superintendents involving a large increase in the expenditure per patient will be ignored.

Certain other criticisms which have been made against the existing organisation appear to be of less fundamental importance. The justification for such a large legal representation on the Board has been questioned. It is true that the care and treatment of the mentally afflicted has legal aspects, but it is mainly the duty of the medical profession to carry out both care and treatment in practice. There is a growing feeling that visitation should not be made by legal Commissioners alone, but that they should be accompanied by one of the medical members of the Board. Some patients doubtless like to see a legal Commissioner, with whom to discuss the question of detention and so forth, but at a time when the treatment of mental disorders is demanding keen medical attention a barrister or solicitor seems out of place as the inspecting visitor of an institution. In years gone by there was a tendency on the part of the Commissioners to remain aloof from the medical work of the day. This cannot be said of the present Board, but it is of the first importance that the medical members should be preponderant thereon, and that they should continue to be of high professional standing and experience. It has been said, also, that the Board has been inclined to insist on certification unnecessarily in some institutional cases, when voluntary treatment might have been carried out with success. Here there has been latterly a definite change in the policy of the Board, and certain cases that can be managed safely on a voluntary footing are now allowed to remain whether certifiable or not. It is to be hoped that the voluntary principle in treatment may be extended, and that rate-aided patients may shortly obtain the privilege of seeking voluntary treatment, opportunity for which is now confined to the private class. The Board has been blamed in some quarters for neglecting to initiate more prosecutions for breaches of the Lunacy Acts, especially where persons of unsound mind have been detained for payment in places other than recognised institutions. This is a matter which bristles with difficulties. Reliable evidence is often not forthcoming, medical men may differ, and public opinion is often hostile, a sentiment that is readily reflected in the verdict of a jury. The policy of the Board in this matter must be allowed to be largely dependent upon the nature and circumstances of each individual case. There is a general dissatisfaction with that part of Section 315 of the Lunacy Act, 1890, which concerns the misdemeanour of receiving an "alleged lunatic" for payment without certificates in an unlicensed house. Clearly such a person should not be allowed to be detained. But, if harmless to himself and others, why should not such a patient be allowed to remain voluntarily if he wishes? For early cases especially it would be useful to avoid certification, always provided that adequate skill and treatment were available, and notification was made to the Board of Control.

It is well known that informed opinion is divided as to the future of the central authority for mental disorders. One group of critics would endow the body with more authority, another would limit its activities to mental institutions and single certified patients only, and transfer the supervision of the care and treatment of incipient and borderline cases to another authority. The object of this school appears to be to divorce the early case from the machinery that is unhappily labelled "Lunacy." Something has been said of the confusion that already exists as a result of departmental independence. Is further division desirable? Attempts at establishing a separate authority for incipient and borderline mental cases might well prove a retrograde step. Should the work of the Board of Control become greatly increased by the measures foreshadowed in recent Bills framed to amend the Lunacy Law, it might well be that more officials would be required, and the question of decentralisation of some of the duties of the Board might then have to be considered; but any radical alteration in its status or limitation of its responsibilities to the care of advanced cases only would, we believe, be deprecated by all who know the difficulties of dividing established from borderline cases. Mental disorder, incipient or developed, is one large problem. Certifiability is strictly a legal conception, arbitrary, and not altogether satisfactory; indeed, a patient may be certifiable one day and not certifiable the next. The lesson of history teaches that mental disorder has characteristics which require care and treatment to be carried out with special precautions, demanding the guidance of a well-organised and well-informed central authority, having full powers of inspection and visitation to all places where mental disorder is treated, whatever its degree. The authority responsible must be a progressive medical body, sufficiently assisted by legal advisers, and adequately remunerated; and it should be able to care both for the patient and for his property.

INTERNAL FIXATION OF FRACTURES.

ALTHOUGH a good many years have passed since Sir Arbuthnot Lane introduced his method of treating fractures by fixation with metal plates and screws, surgical opinion is still divided as to the general applicability of it, and there is no accepted consensus of opinion as to the class of cases in which the operation should be performed. Much has been said and written as to the alleged bad effect of the metal in causing absorption of bone, but it is not yet proved that this is a necessary or even a very frequent result of plating. In these circumstances an endeavour to sum up experience of the results of various methods of internal fixation in fractures is very welcome. Dr. E. L. Eliason and

Dr. Drury Hinton have attempted this in a paper published in Vol. IV. of the Thirty-fourth Series of international Clinics,[1] and although the experience dealt with by them is practically confined to the United States, the lessons to be learnt are of universal application. The annual casualty list among civilians in the United States would not disgrace a war of moderate or Victorian proportions, and although deplorable it has the grim advantage of affording to American surgeons unrivalled opportunities of studying injuries in peace-time. The authors justly lay stress on the importance of what they call muscle equilibrium as well as extension after plating. By this is meant the placing of the affected limb in such a position that the tonic contraction of the muscles does not tend to distort the fractured bone. For instance, in the case of a fracture of the femur in its upper half, which is being treated in the fully extended position, the action of the ilio-psoas and of some other muscles tends to produce angulation at the site of fracture and displacement of the plate. This circumstance accounts for some bad results after plating, which can be avoided by using the semi-flexed position combined with extension in the line of the thigh. This paper is illustrated with a number of radiographs, many of which show Lane plates embedded in bone 10 to 14 years after their application. The authors sum up their experience in 13 conclusions. They recommend internal fixation, when repeated attempts at correction have failed, when reduction cannot be maintained, and in certain compound fractures. They prefer plates to bone-grafts except for cases of non-union, but would totally exclude their use in fractures of the forearm. There is no doubt that Lane's method, like many other procedures, has been discredited because enough discrimination in selection of cases has not been used, and less often perhaps because of faulty technique and want of experience and skill. Good judgment and training and a proper appreciation of simple mechanical principles should be possessed by all operating surgeons, but above all, by those who would obtain the best functional results in the cure of broken bones.

TUBERCULOSIS OF THE MAMMARY GLAND.

ACCORDING to Dr. James A. Cahill, jun.,[2] surgeon to the Providence Hospital, Washington, who records an illustrative case, tuberculosis of the mammary gland, which was first described by Sir Astley Cooper in 1829 under the name of "scrofulous swelling of the breast," is an extreme rarity. Lancereaux, in 1860, was the first to make a diagnosis from histological examination. DuBarr, in 1881, distinguished two types, the nodular or discrete and the confluent. Deaver, in 1914, collected 74 cases from the literature between 1904 and 1914, five of which had occurred in his own practice. According to Dr. Cahill, tuberculosis of the breast, which is almost invariably limited to one side, may be described under three distinct types—viz., the disseminating, the confluent, and the sclerosing. Infection of the breast, like that of other glands, takes place by the lymph, blood, or direct extension, as well as through the skin itself by means of a cracked nipple. In the nodular or discrete form a small lump is found in the breast, usually in the upper and outer quadrant. In the early stage the gland is movable, the overlying skin is glossy, and later becomes red and inflamed. The nipple may become retracted early or late. Enlargement of the axillary glands is present in about half the cases in the early stage. The growth is usually slow and is not painful until necrosis has occurred and the whole breast has broken down. In the later stage the axillary glands become involved in about 70–80 per cent. and necrosis occurs. In the disseminating type the nodules remain distinct and there are numerous large areas of necrosis. The sclerosing type is characterised by a diffuse hardening which overlies deep abscesses or, less frequently, by the whole lesion being entirely fibrous. Tuberculosis of the mammary gland is essentially a disease of the female sex, only 11 cases having been reported in males; 70 per cent. of Deaver's cases occurred between the ages of 20 and 50. Trauma is an important factor. The condition may be primary, involving the mammary gland itself, or secondary to some focus elsewhere in the body. The following conditions must be excluded from the diagnosis: Carcinoma, fibro-adenoma, interstitial mastitis, actinomycosis, gumma, chronic and pyogenic infections. The prognosis is good in the primary type if complete amputation of the breast is carried out. In the second type the outlook depends on the primary factor or the pulmonary condition plus removal of the breast. Treatment consists in complete removal of the breast, dissection of the axillary glands, and removal of the pectoral muscles if the glands are involved. Dr. Cahill's case is remarkable as having occurred in a girl aged 13, the symptoms appearing within a month of a blow on the left breast. Complete recovery followed removal of the organ.

[1] International Clinics. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U.S.A., with collaboration. Vol. IV. Thirty-fourth Series, 1924. London: J. B. Lippincott Company. 1924. Pp. 308.

[2] Surgery, Gynecology, and Obstetrics, February, 1925.

SANOCRYSIN: AMERICAN CRITICISM.

IT is interesting to note that the comments in the *Journal of the American Medical Association* (Jan. 24th and Feb. 14th) on the evidence hitherto advanced in favour of sanocrysin as a chemo-therapeutical remedy for tuberculosis coincide closely with those put forward in a recent issue of THE LANCET.[1] It is, moreover, suggested that in connexion with sanocrysin it is only the name that is new. The toxic properties of the salt are emphasised, and it is pointed out that all the therapeutic effects were produced by a combination of the salt and serum. Attention is also called to the dangers of using only one control animal in each batch of experiments, since it is well known that the individual susceptibility of animals to tubercle cultures varies widely. Again, the virulence of the cultures used in the experiments with calves is called into question and the experiments with tuberculous monkeys are considered to be of little value, since the evidence upon which the diagnosis of infection was made was insufficient. The possibility that the post-mortem findings upon infected animals killed with sanocrysin were not due to tuberculin shock but to metallic poisoning is put forward with some force. The crucial therapeutic experiments are being repeated in the United States Public Health Service Laboratories before the remedy will be allowed upon the market in that country, and the wise advice given to the public is of general application—"to await patiently the knowledge that will come from carefully planned experiments now under way."

AUSCULTATION OF JOINTS.

IN *Wiener Klinische Wochenschrift* of Feb. 5th Dr. Edmund Maliwa, Baden, contributes an interesting article on the subject of auscultation of joints. The large group of the chronic arthritides is notoriously the stepchild of internal medicine, not only as concerns the teaching of students, but also with regard to the scientific interest of the research worker. Treatment is therefore ineffective and prognosis unsatisfactory. One of the most important parts in the physical examination of the joints in cases of chronic arthritis is palpation of the affected part. But palpation and examination by radiograms sometimes fail in joints in which the affection soon afterwards appears. Naturally the idea comes up whether there are not crepitations outside the limits of palpation which are only perceptible acoustically. The best analogy is found in a perisplenitis which is audible but cannot be felt. The crepitation may be too deep-seated or the fineness may be below per-

[1] THE LANCET, Jan. 31st, p. 239.

ceptibility and therefore below the stimulus-threshold of palpation. Auscultation must be properly carried out. It is implicitly recommended that a binaural stethoscope be used with a small sound disc—the latter must be placed firmly on the skin. In choosing the position of auscultation, in order to avoid artificial noises, it is important to select one which remains undisturbed while the movement is carried out. Further, the positions of auscultation should be as near as possible to the joint. Perception of crepitations at an early stage is extraordinarily helpful in confirming a diagnosis. In this connexion it is pointed out that the conditions for the transmission of sounds in general in the joints are very favourable. With practice it is possible to acquire a conception of the rougher and finer structure of the source producing the crepitation and also whether it is diffuse and concerns the whole joint, or is localised. Affections of the para-articular tissue, without affection of the joint in the narrower sense, are more easily defined diagnostically. The diagnostic advantages are so satisfactory, the judging of certain cases is made so much easier that it is rightly and urgently recommended that this method of diagnosis should be introduced in the normal course of the physical examination of joints. In the study of the literature pertaining to the subject published during the last 30 years, which includes about 600 papers, only one reference, by Garrod in the Royal Society of Medicine, January, 1911, is to be found. It is indeed curious that the auscultation of joints up till now has scarcely been used.

HEALTH ADMINISTRATION UNDER RURAL DISTRICT COUNCILS.

IN the past it was almost the invariable custom for one of the local practitioners, who might or might not be interested in administrative health problems, to be charged with the duties of a medical officer of health of a minor local authority, such as a rural district council. Theoretically this part-time system, which is still largely adopted, is well adapted, on the one hand, to bring practitioners into touch with questions of public health, and, on the other, to ensure that the medical officer of health has sympathetic understanding of the difficulties with which his colleagues in private practice have to contend. In practice, however, it is often found that those who are zealous practitioners care little for administrative work, and that the combination of two or more districts to appoint a whole-time medical officer of health proves to be the more satisfactory arrangement. Especially is this so when the medical officer is permitted to enlarge his experience by accepting part-time duties as tuberculosis officer or school medical officer under the county council. The remuneration which should be paid to such a medical officer has recently been under consideration by the British Medical Association in conjunction with the Society of Medical Officers of Health; the conclusion arrived at is that the combined remuneration for all work undertaken should be not less than the minimum commencing salary of a whole-time medical officer of health, as indicated by the population of the combined areas. An alternative way of securing public health administration of rural districts too small to justify the appointment of a full-time medical officer is to permit an assistant medical officer under a county council to become a district medical officer for a definite proportion of his time—say, a half-day per week. Such an assistant medical officer should, in the opinion of the two organisations who have been considering these questions, be paid at the rate of £80 per annum for each half-day per week spent in the service of the rural district, and his salary from the county council should be reduced by one-eleventh for the same period. For example, if he were being paid at the rate of £600 a year he would stand to gain £26 a year, as well as valuable experience by undertaking the duties of district medical officer of health for one half-day a week. The opportunity of doing work of a more or of a less specialised nature than that which occupies him as a rule should make an appeal to an enthusiastic officer in the public health service. Both suggestions are likely to be appreciated by those who wish to be conversant with every branch of their specialty.

AN EPIDEMIC OF SPIROCHÆTAL JAUNDICE.

THE danger of infective jaundice becoming a disease of practical importance to medical officers of health in these islands is emphasised by an interesting article in our present issue. Prof. D. Murray Lyon and Dr. G. Buchanan describe a minor epidemic affecting two families in Edinburgh in the late summer of last year. In the first family four of nine persons were affected, and in the second three other children, playmates of the first family, suffered later from the same disease. In all cases the most prominent features of spirochætosis icterohæmorrhagica were observed—fever with malaise, headache, and joint pains being followed by jaundice with marked gastro-intestinal disturbances, whilst a tendency to hæmorrhage, epistaxis, hæmaturia, hæmatemesis, and extravasations of blood under the skin was a common feature. The nature of the infection was confirmed by laboratory tests; blood from early cases, and centrifuged urine from later ones, was inoculated into animals, guinea-pigs, and mice, and in six cases lung hæmorrhages were produced. But the difficulty of obtaining full confirmation of the clinical diagnosis in these cases is shown by the fact that in only one of 44 laboratory animals inoculated were spirochætes demonstrable in the lung lesions after death. In spite of very careful search and examination of rats, mice, and domestic animals in the district where the epidemic occurred no spirochætal infection of this nature was discovered which might account for the human cases, and the origin was probably due to direct infection from a child visitor who had recently arrived from the Malay Peninsula and who had had an attack of febrile jaundice. In view of the frequency with which mild cases of spirochætosis icterohæmorrhagica have occurred without jaundice it is remarkable that this symptom was noted in every one of the present cases. The Edinburgh authorities are to be congratulated on the thorough way in which they have investigated a difficult problem. Since the war minor epidemics of spirochætal jaundice have been reported in France, in Sweden,[1] and in other European countries. There was an epidemic of obscure hæmorrhagic jaundice in New York in 1922,[2] and in 1924 Prof. Lovell Gulland and Dr. G. Buchanan reported[3] an epidemic, proved to be spirochætal, amongst miners in East Lothian.

WE regret to record the death of Dr. J. J. Graham Brown, consulting physician to the Royal Infirmary, Edinburgh, on Tuesday, March 3rd, at the age of 71.

AT the election on Tuesday last for a representative of the Faculty of Medicine on the Senate of the University of London Sir Holburt Waring retained his seat with 67 votes, as against 57 given for Sir G. Lenthal Cheatle.

THE King has appointed Dr. John Cowan to be one of the honorary physicians to His Majesty in Scotland in the room of the late Sir James Mackenzie. Dr. Cowan is professor of medicine in the Anderson College of Medicine, Glasgow.

THE next Social Evening of the Royal Society of Medicine will be held at 1, Wimpole-street, London, W., on Monday, March 16th, when the President, Sir StClair Thomson, will receive the guests at 8.30 P.M. Dr. H. Charles Cameron will give an address in the Robert Barnes Hall at 9.30 P.M. on "John Locke, the Philosopher (1690), on the Upbringing of Children."

[1] Hygiea, Stockholm, 1923, lxxxv., 40.
[2] Jour. Amer. Med. Assoc., 1922, lxxix., 1498.
[3] Brit. Med. Jour., 1924, i., 313.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXII.—THE TREATMENT OF ANOREXIA IN CHILDREN.

THE treatment of a child who has lost inclination for food will always be one of the commonest problems which the practitioner is called upon to deal with, but it will not always be one of the easiest. One reason for this is that the trouble appears at the onset to be so trivial, so likely to right itself spontaneously, that the medical adviser usually does not see the child until a series of domestic remedies have been employed and have failed. At this stage of affairs the causal factors of the original anorexia may have been obscured by its results, rendering the exact nature of the trouble extremely difficult to determine.

Owing to the multiplicity of causes it is quite impossible to propound any line of treatment which will be applicable to every case of anorexia, and the administration of a "pick-me-up" without thorough investigation of the underlying cause is strongly to be deprecated. In every case a physical examination of the child should be carried out, careful inquiry should be made into the diet and the daily routine, and some idea of the child's temperament and mental attitude should be gained by observation of his behaviour. One must admit that in a certain number of children no precise cause of the anorexia can be discovered, but it is usually possible to place the case into one of three classes: (1) Cases in which the loss of appetite is due to the presence of some definite disease. (2) Cases where no sign of gross disease is found, in which anorexia is due to a temporary disturbance of the alimentary tract occasioned by errors of diet. (3) Cases in which refusal of food is a manifestation of neurosis.

Anorexia Resulting from Definite Disease.

It will be found that this class comprises a very small minority of the children who are brought for advice for this symptom. Nevertheless, cases are met with in whom the mother has noticed no other abnormality, but who show signs of disease at the time or shortly after. In these children there is usually obvious cachexia, which is not the case in the other classes which will be described. Scurvy, though not a common cause, may produce marked anorexia before any of the more typical symptoms have developed. In children of 3 years or more, tuberculosis, usually of thoracic or abdominal glands, is more likely to be found than any other disease. These children generally lose weight, but do not show any definite evidence of disease of the alimentary tract, and the tongue is usually clean. The treatment in this class of case must be directed against the underlying disease rather than against the symptom. Tuberculous children usually recover their appetite after they have been sent away to the country or on the balcony of a hospital ward. Cod-liver oil and malt are generally well taken, and serve to maintain nutrition until the desire for food is normal.

Anorexia due to Temporary Disturbances.

Anorexia due to temporary disturbance of the alimentary tract is occasioned by errors of diet in by far the largest number of cases; the great majority of the cases occurring between the ages of 2 and 6 are attributable to this cause. Some dyspepsia may be present, but it is usually not severe, and has often passed off, perhaps as a result of the abstention from food, before the child is brought up for advice. The mother states that the child "picks at" his food, and refuses to continue his meal after a few mouthfuls have been eaten. The child is usually fairly well nourished, but looks out of sorts and is fretful and irritable. The tongue is pale, with slight furring of the posterior part, but is not usually decidedly "dirty" unless constipation is present as well. There may be some vague discomfort on pressure in the abdomen, otherwise examination reveals no abnormality.

Careful inquiry into the diet of these children nearly always brings to light some unsatisfactory element in the composition of the diet or the arrangement of the meals. A certain number of them have been frankly overfed, and in them the anorexia is merely an expression of the need for alimentary rest. They should not be pressed to eat, but should have a small allowance of concentrated forms of food, and should not have more than half to three-quarters of a pint of milk in the day; they usually make a good recovery in two or three weeks. In a number of others the trouble will be found to have arisen from habitual irregularity, hurried meals at odd hours, supplemented by pickings from the parents' table, and biscuits or sweets at all times of the day. Correction of such obvious errors as these generally brings about a gradual return of the appetite. But in the majority of cases the dietetic error is qualitative, and this is especially so in the most severe and obstinate ones. It may take almost any form, but the first place can certainly be given to a sloppy diet containing excess of carbohydrate: a dinner of which the most frequent item is a mash of gravy and potato, probably followed by a milk pudding almost every day, and a breakfast or supper consisting largely of hot bread-and-milk. A diet such as this, relatively poor in protein and definitely deficient in fat, consumed readily with little need for mastication, is an extraordinarily constant feature of the histories given by the parents of this type of patient. It is in most cases well tolerated for a considerable time, and gives rise to no signs of malnutrition, but eventually the child begins to lose appetite, and perhaps to complain of vague dyspeptic pains. At this stage some Parrish's food or other iron tonic is obtained, and this never fails to aggravate the trouble. Finally, it is found that the child is losing weight, and advice is sought.

Cases of this type respond to treatment more readily than those of the two other classes; if the intelligent coöperation of the mother is obtained, one may be fairly confident of restoring the appetite in all but a few of them in a few weeks. The treatment demands a certain amount of attention to detail, and may be considered under the headings of management, diet, and drugs.

Management.—It is most important that a child's meals should be unaccompanied by anxiety, the effect of which upon the appetite is well known to most people by personal experience, and may be attributed to inhibition of gastric secretion by increased outflow of adrenalin. An unpunctual breakfast, eaten hurriedly and in apprehension of penalties for late arrival at school, is a situation which must never be permitted. The initiative in discovering this situation will rest with the medical adviser, for the information is not likely to be volunteered. Regular meal-times must be observed, and no food allowed at other times. It is well to make sure that the child is getting an adequate amount of exercise in the open air. Constipation is common, though by no means constant, and should of course be corrected when present.

Diet.—The diet must be regulated according to the age of the child. Slops, such as bread soaked in milk, or gravy and potato, should be forbidden altogether, and it is best to withhold potato in any form until the appetite has returned. Milk puddings should be restricted to two or three in the week, and replaced by baked apple, stewed fruit, and an occasional steamed pudding. Benefit often follows reduction of the daily allowance of milk to 1 or 1½ pints. The principal constituents of the diet should be eggs, in any form; fish, meat, fat bacon, with beans, peas, lentils, or green vegetables.

Porridge is a useful alternative for breakfast unless the child strongly objects to it; in hospital practice it is best to secure a good trial for it because of its

cheapness. Bread-and-butter may be taken, but in moderation, and *after* the more essential constituents of the meal.

Drugs.—In this type of case drugs are usually of considerable benefit, but harm is often done by unsuitable ones. Iron tonics are contra-indicated in all cases while the anorexia persists; they may be used later if the tongue is of normal appearance, but are not really needed even then. Cod-liver oil may do good to some children, but it certainly upsets others, and should be reserved for the few cases in which nutrition has suffered severely. An alkaline mixture containing sod. bicarb., gr. v.–viii., with infusion of gentian, rhubarb, and ginger roots, made up in peppermint water, is almost always of value at the onset. To this may be added tinc. aloes, ℥ v.–x., if required. The mixture should be taken 15 minutes before meals. Patent foods and medicines, particularly those containing malt, should be stopped.

Anorexia as a Manifestation of Neurosis.

Refusal of food as a manifestation of neurosis is found more often among the children of well-to-do parents, and the features which it presents vary to some extent with the age of the child. As a general rule, the older the child the more definitely psychopathic are the characteristics of his behaviour. In quite small children anorexia occurs as a form of mere "naughtiness" or negativism, often produced, and generally aggravated, by unwise management. The child usually shows signs of nervous excitability or spasmophilia, but under suitable conditions may develop into a perfectly normal child. The majority of these cases occur at a rather later age, between 5 and 10, and the neurosis has many points in common with other neurotic symptoms, particularly enuresis; in both cases it serves as a means of obtaining attention and exerting power for a child who has failed to do so in other ways. Anorexia and enuresis are not found to occur in the same child, but in dissimilar types, probably determined by the endocrine pattern. The child is usually fairly well nourished, but does not look robust, and the tongue is clean. The mother states that the child scarcely takes any food, usually refusing solid food from the very beginning of a meal, sometimes taking milk or tea fairly readily. If the child is forced to eat, the food may be vomited almost immediately afterwards. There is some loss of weight, but generally surprisingly little. It is nearly always found that as a means of exerting power this symptom has been entirely successful: the mother has devoted a large part of her time to coaxing and entreating, or to equally futile punishment.

Drugs have no place in the treatment of this type of case. The trouble will persist as long as his object is being achieved, and the essential part of the treatment is the removal of all signs of anxiety on the part of the parents. The medical attendant should be careful not to discuss the subject in the child's presence. The mother and nurse must be persuaded to stop coaxing and to make no comment on the appetite. If this is really carried out, a certain number of the patients will regain their appetite in a short time. But success on these lines is not obtained in every case. A large proportion of the parents are of an emotional type, and do not succeed in concealing their anxiety; moreover, a child who has borne the pageant of an empty stomach successfully from home to the seaside and to relations in the country will not always accept a sudden change of attitude. In many cases it is necessary to remove the child from home to the care of someone who will adopt the desired attitude from the start. If there is serious loss of weight hypnotic suggestion may be employed, and is usually successful, but relapse is likely unless the environmental conditions are dealt with at the same time.

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Special Articles.

SPIROCHÆTAL JAUNDICE.

REPORT OF A SMALL EPIDEMIC.

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With Microscopical and Experimental Observations by

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DURING the months of July, August, and September last there occurred in Edinburgh a small outbreak of infective jaundice which has certain points worthy of being recorded. The household primarily involved consisted of nine persons, of whom four became affected. The first to fall ill was the youngest (Case B, aged 7). The second victim (Case C, aged 13) began to complain about three weeks later. Case D, aged 17, took to bed four days after this, and Case E, aged 19, after a further interval of four days. One boy, aged 15, was unaffected, as also were the parents and the two maids. Three children in a second household also suffered, the earliest sign of the disease being noticed in Case F (aged 3, a playmate of Case B), about the same day as Case C took ill (August 8th). Cases G, aged 6, and H, aged 10, were noticed to be infected respectively 31 and 27 days after Case F.

On the appearance of jaundice in a second member of the first family the nature of the condition was suspected. The presence of spirochætes in the urine was confirmed and a possible source of infection was looked for. These investigations proved negative. It was then recalled that a short time previous to the outbreak of the epidemic a small child (Case A) from the tropics (Tumpat, Kelantan, Malay Peninsula) had lived in the house for a week and had played a great deal with Case B. This subject is believed to have been the source of infection.

Details of Cases.

CASE A.—Female, aged 5, recently returned from the tropics, had apparently been ailing a good deal during the voyage. During the time she stayed in the house she seemed to be out of sorts, and was said to show slight jaundice even though she had a rather tanned skin. An evening temperature of 100° to 102° F. was recorded on several occasions. This child left Edinburgh for Wales a short time before the epidemic started. When spirochætosis was suspected, the local public health authorities were communicated with and a sample of urine was obtained from the patient. This contained undoubted spirochætes.

CASE B, a well-conditioned boy of 7, became ill on July 10th about a week after the departure of Case A. The patient became sick and had some diarrhœa, and his temperature reached 102° F. By Saturday, July 14th, he had sufficiently recovered to attend a Sunday school party, but on Monday, 16th, sickness and diarrhœa began again and he vomited all his food. No jaundice was noticed at this time. After about three days the child improved greatly, and appeared well for about a week, when a relapse took place. He was seen by Dr. John Thomson on July 24th. Pain was complained of about an hour after every meal, and the patient vomited even milk, although he complained of being hungry. The abdomen was normal, and there was no increased tension in the recti. A heavy blanket over the upper abdomen or pressure in this region elicited tenderness. The tongue was red and furred, and constipation was marked. The temperature was normal, but had been 99° on the evening of the 23rd; pulse 68, with respiratory irregularity. The presence of jaundice could not be definitely determined. On July 26th his general condition seemed to have greatly improved, but he vomited again. After three days' further illness, jaundice appeared suddenly and developed rapidly during 24 hours. The pigmentation varied from day to day, and traces were still present on August 13th. Spirochætes were found in the urine when the patient was first seen—that is, on the thirty-fourth day of his illness. The condition in this subject proved to be mild, and convalescence was uneventful.

CASE C was a boy of 13. This patient began to complain greatly of headache on August 7th. Nausea and vomiting appeared on the same day, and there were also severe pains in the legs. Jaundice developed first on the 11th, and at this time the temperature was 102° F. When seen on the 13th the patient was lying listlessly in bed greatly prostrated. The skin had now a deep yellow colour. No spots were present and there was no itching. Both spleen and liver were slightly enlarged, the spleen reaching half an inch in front of the anterior axillary line, while the liver edge extended an inch and a half below the costal margin in the mid-clavicular line. There was slight tenderness of the liver. The abdomen appeared scaphoid. Constipation was marked, and the urine had a dark brownish colour from the presence of bile. On the 14th the patient seemed to be somewhat better. The blood was examined for spirochætes, but none were found. Jaundice gradually increased for several days, then fluctuated from day to day. A few shotty glands appeared in the groin. On the 16th numerous pin-point hæmorrhages were noticed over the skin of the arms and the abdomen, and the soft palate showed a crop of rather larger hæmorrhagic effusions, the average size being about a quarter of an inch in diameter. Ten cubic centimetres of anti-spirochætal serum (B., W., and Co.) were given on the 16th and a similar dose on the 17th. No noticeable reaction occurred. The patient's condition improved rapidly. The lethargy present during the earlier phases of the disease passed off, the patient's appetite became ravenous after the 17th, and he got out of bed several times without permission. Further progress was uninterrupted.

CASE D was of more severe type. The patient, a girl of 17, was quite well until the evening of August 11th, when she felt out of sorts. Next morning there was considerable headache, accompanied by sickness and vomiting and also by generalised pains most severe over the lumbo-sacral region and the lower abdomen. (The sensations resembled the onset of menstruation.) During the 12th, 13th, and 14th the temperature ranged from 100° to 102° F., and the pulse ran about 96. The patient was bright and cheerful. There was no jaundice, and no hepatic tenderness could be made out. Albumoses appeared in the urine, but the only evidence of bile was a positive response to Hay's surface-tension test for bile acids (sulphur granules). On the 15th the patient became very prostrate, the abdominal pains were still severe, and there was no sign of menstruation. A faintish yellow tinge now appeared on the nose and the conjunctivæ. The liver edge could now be made out half an inch below the costal margin in the mid-clavicular line. The patient appeared to be distinctly worse on the 16th. She slept badly. Sickness developed and the patient vomited all food taken. Streaks of blood were present in the material returned from the stomach. The upper part of the abdomen was tender as well as the lower region. Numerous small petechiæ appeared on the arms. Ten cubic centimetres of anti-spirochætal serum were given intravenously. The temperature, which had been high before the injection, now fell to 97·8° and remained normal until the 24th. During the 17th the anorexia and vomiting continued. The patient became very restless and irritable, and she scarcely slept. Various measures directed to relieving the vomiting failed. It was impossible to feed by mouth as the vomiting was so frequent. A second dose of serum was given on the 17th. The condition remained much the same during the 18th. On the evening of that day quite a large hæmatemesis took place, and as the patient was still very restless and distressed and had not slept, morphia was administered. The patient passed a quieter night, being less restless and sleeping in snatches. No feeding was attempted by the mouth though the persistent retching had now stopped; nutrients and salines were given by rectum. During the day (19th) the patient remained semi-conscious, but rubbed her face a great deal. In the evening a definite gumboil developed on the right side of the lower jaw. The patient, though semi-conscious, became restless, angry, and distressed. The jaw swelling was lanced deeply without pus being reached. The mass apparently contained blood only. During the 20th, 21st, and 22nd the patient remained unconscious, showing a great deal of restlessness and irritability, from time to time calling out in delirious fashion. The legs and lower part of the body were frequently thrown about as if some pelvic irritation were present. Nutrients were well retained, and there was no sign of rectal trouble. Catheter specimens of urine showed the presence of blood, often in considerable amount. Menstruation became established on the 21st.

On the 22nd the swelling over the jaw became larger and softer, and was again incised, but no pus appeared even when the offending carious tooth was extracted. A considerable amount of oozing of blood followed the free incision of the swelling, and for several days very fœtid blood-clot and necrotic material were evacuated from the area. A daily elevation of temperature from August 24th to Sept. 3rd was attributed to absorption of toxic material from the mouth. Complete consciousness returned on the 23rd, a few hours after the second lancing of the gumboil. The jaundice continued to advance until about the 25th and thereafter slowly declined, being practically cleared up by Sept. 8th. By the 26th the patient had greatly improved, and her appetite was extremely good. In spite of the toxæmia the patient's general condition made rapid progress, and she was able to go on holiday on Sept. 8th.

CASE E, a girl of 19, felt rather out of sorts on August 13th. Next morning she did not complain, but by the evening her temperature was 101·8° F. Fever persisted during the 15th and 16th, but the patient felt better, took her food well, and had no pains. Traces of bile appeared in the urine on the 16th, and the patient was given 10 c.cm. of anti-spirochætal serum intravenously. A further dose was given next day and no immediate reaction took place. The temperature fell to normal after the second dose of serum, and remained about normal thereafter. A few urticarial spots were present on the arms from the 24th to the 27th. Anorexia, sickness, and vomiting began on the afternoon of the 18th, and for four days rectal feeding was required. The appetite returned on the 22nd. The advance and decline of the jaundice paralleled Case D. Further progress was uneventful.

Cases F, G, and H occurred in another family.

CASE F, a girl of 3, was a playmate of Case B. She had only a mild attack and was in bed for two days, August 8th and 9th, when she felt a little off colour. Thereafter she was quite cheerful and bright, although vomiting occasionally took place. Jaundice appeared on August 15th, and spirochætes were demonstrated in the urine on the 16th. Her nose bled a few times, and a crop of hæmorrhagic spots appeared on the palate. No blood was seen in the urine or the vomited matter.

CASE G, brother of F, was aged 6. He first became unwell on Sept. 8th, but was never very ill. Sickness, though troublesome, was never serious. Jaundice appeared on Sept. 12th and some epistaxis occurred.

CASE H, a girl of 10, fell ill on Sept. 4th. This subject had a much more severe attack than either F or G, the main feature being excessive vomiting. Epistaxis was also present in this case, but no gross bleeding occurred elsewhere. This patient was confined to bed for about a fortnight.

Cases F, G, and H recovered fairly quickly in direct ratio to the severity of the disease, which, it will be noticed, was proportionate to the age of the patient.

The cases outlined above answer the usual description of spirochætal jaundice. Considerable difference in severity was noticed as is common in such epidemics. In nearly all the victims the illness commenced suddenly, like the onset of an infectious fever, the initial pyrexia being accompanied by malaise, headache, and various pains. The most pronounced symptoms were gastro-intestinal disturbances, jaundice, and hæmorrhages. Nausea, anorexia, sickness, and vomiting were present in all subjects. The combination of distaste for food and the tendency to vomit everything eaten made feeding difficult in the more severe cases. Acidosis occurs readily in children, and acetonuria has been noted as a common symptom in this disease, so in order to avoid this risk a special endeavour was made in Cases D and E to maintain nourishment by nutrient enemata containing large quantities of glucose (as advocated by Ryle). By this means it was possible to prevent the appearance of more than the merest trace of acetonuria on one or two days. Constipation was troublesome and required constant attention. The rapid return of appetite when convalescence became established was a striking feature in several of the subjects. Jaundice occurred in every case, being marked in all except the mildest. As has been pointed out, it does not come on until the fever has been present for about four or five days. It may then develop very rapidly during a few hours, increasing in intensity for several days and then disappearing slowly. In cases seen early, bile could be detected in the urine before it was apparent even in the conjunctivæ. Irritation of the skin was scarcely complained of. The pulse-rate was usually elevated during the febrile phase, and later a certain amount of slowing occurred in some of the cases. The hæmorrhagic character of the disease was prominent

in this epidemic. Petechiæ and larger skin effusions were frequently noted, and blotchy patches were found on the palate in two cases. Epistaxis was common. In three of the subjects red blood corpuscles were found in the urine, while in one of these cases considerable hæmorrhage occurred from the urinary tract. The vomitus brought up after distressing retching often contained streaks of blood. Case D had a rather severe hæmatemesis. Muscular pains and abdominal tenderness were present in the more severe cases, and in these there were also some temporary enlargement and tenderness of the liver. The urines throughout were strongly acid, bile was present in large quantity, traces of albumin were found in several during the febrile period, while the urines of C, D, and E showed for a time considerable albumose.

The anti-spirochætal serum employed was prepared from a strain of organisms isolated from rats caught in East Lothian. Two doses of 10 c.cm. each were given on successive days to Cases C, D, and E. In each subject the temperature fell to normal and remained there. No other immediate effect was noticeable. It is hardly likely that the sickness could be attributed to the serum. About ten days after the intravenous administration of the serum an urticarial rash appeared on the forearm in the neighbourhood of the site of injection in two cases.

The mental symptoms of Case D were difficult to account for. Breathlessness, mental confusion, and unconsciousness are usually recognised as prognostic signs of very grave import, and at one time this subject was so low that her life was despaired of.

MICROSCOPICAL AND EXPERIMENTAL OBSERVATIONS. BY DR. BUCHANAN.

As such an outbreak of this disease in two families in a town has not been reported in this country before, every effort was made to confirm the clinical diagnosis and to investigate all possible sources of infection. There was no difficulty in arriving at the diagnosis of infectious jaundice on clinical grounds, but confirmation of this by laboratory means was not so readily attained. The confirmatory methods adopted consisted in the examination of the blood and urine. As the blood is considered to be infective up to the seventh day of illness, specimens were taken only from those patients seen during the first week of the disease. Several films of the blood were examined by dark-ground illumination, and about 4 c.cm. were inoculated intraperitoneally into guinea-pigs. Although spirochætes are not eliminated in the urine until about the eleventh day, for statistical reasons, specimens were examined throughout the illness when circumstances permitted. Films of the centrifugalised deposit were examined by dark-ground illumination, stained films were prepared, and about 4 c.cm. of urine with deposit were inoculated intraperitoneally into guinea-pigs and occasionally mice. It so happened that only three of the patients were seen within the period when blood examination and animal inoculation might have proved successful; the findings, however, were negative.

The results of the microscopic examination of the urines after the febrile period, though positive, were not unequivocal. Although spirochætes were found in the urine of all the patients at one time or another they appeared to be devitalised and degenerated. An explanation of this may be found in the acid reaction of the urine and the presence of bile in it, for experiments showed that these properties were not only inimical to the vitality of the leptospira but also destructive to its characteristic morphology. Hence a difficulty arose in establishing a diagnosis on microscopic examination of the urine alone. In two of the patients—viz., D and E—seen from the onset of illness, specimens of urine were frequently examined to ascertain the day on which spirochætes first appeared in the urine. Definite, though few, spirochætes were first found on the fourteenth day in Case D, and on the twelfth day in Case E. In the other cases circumstances only permitted of obtaining the first specimen of urine at varying dates after the acute stage. Spirochætes were noticed in each case from the eighteenth up to the twenty-third day of illness. With the exception of Case E, spirochætes were not observed in the urine after the thirty-seventh day. In each instance spirochætes were detected as a rule with difficulty; exceptionally three or four might be encountered in one microscopic field and none on further examination of the slide. By dark-ground illumination the fine spirals were not recognised, but they seem to be indicated by a slight granular appearance, which was more pronounced in the stained films. The forms seen could only be regarded with suspicion as of the leptospiral type, so that it remained to rely on the results of animal inoculation for confirmation. Repeated failure to produce by this means any signs or symptoms of the disease in animals prevailed over a long period and necessitated the use of a large number of animals. The devitalising effect on the leptospira of the acid and bile in the urine was held partly responsible for the failure to infect. Although bile ceased to be excreted in the urine after a time the reaction remained strongly acid. Forty-four animals, including four mice, were employed before absolute confirmation of the clinical diagnosis was obtained. Thirty-one of these animals remained alive and well and 13 died; the latter number comprised 11 guinea-pigs and 2 mice. The results of the animal inoculations with the urines obtained at different periods during the course of the illness may be tabulated as follows:—

Table Showing Results of Animal Inoculations, with Urine of Patients.

Case.	Animals inoculated.	Result.		
		Survived.	Died.	Post-mortem findings.
A	2	2	0	—
B	5	5	0	—
C	6	5	1	Lungs showed spotted hæmorrhages; no jaundice; no spirochætes found. Subinoculation negative.
D	11	9	2	*B. coli* infection arising from urine inoculated.
E	11	6	5	One showed typical spirochætal jaundice with leptospiras present in the organs. Subinoculations positive in 7–9 days. One guinea-pig and one mouse showed spotted lung hæmorrhages, but no leptospiras found. Subinoculations negative. Two showed no obvious lesions.
F	2	1	1	Lungs showed spotted hæmorrhages; no leptospiras found.
G	4	1	3	Two showed lung hæmorrhages, one typically spotted, the other more diffuse. No leptospiras found. One mouse showed no lesions or leptospiras.
H	3	2	1	One lung showed a prominent hæmorrhagic spot on anterior aspect. No leptospiras found.

The outstanding feature in the table is the record of only one definitely positive result out of 44 animal experiments. Seven animals no doubt showed localised lung hæmorrhages peculiar to leptospiral infection, but as the organism was not recovered a definite diagnosis could not be made.

Noteworthy observations are associated with the urine obtained from Case E, and with the infected animal. Spirochætes were found in the urine of this patient on six different occasions and up to the sixty-sixth day from the onset of illness. Examination of the urine on the sixty-sixth day revealed the presence of only a few spirochætes, and the animal inoculated with this specimen succumbed in 30 days with signs of typical spirochætosis. The fatal issue was singularly postponed, but the paucity of the spirochætes in the urine, amongst other factors, may be a cause of this; inoculation of infinitesimal doses of culture may not prove fatal until about the twenty-ninth day. Subinoculations into other guinea-pigs from the originally infected animal have given very irregular results, pointing either to variability in the selective action of

this strain of leptospira, or to individual idiosyncrasies in the animals inoculated. In the third animal passage both jaundice and skin hæmorrhages were absent, but the lungs were typically mottled; spirochætes were found with difficulty in the liver. In the fourth animal passage the only macroscopic lesion was confined to the uterus, the whole of which presented the appearance of a bicornuate blood-clot. But for this lesion the animal showed no naked-eye evidence of infection. Here again spirochætes were extremely few in the liver or other organs, and none were found in the uterine blood. These facts are mentioned merely to indicate the peculiar behaviour in animals of this human strain. So far the passage of local rat strains through guinea-pigs has given, as a rule, more uniform results.

The investigation of a possible source of infection included the examination of rats and mice, the house cat, cistern and tap water, and finally a specimen of urine from Case A. No rats or mice had ever been seen in the house in question and the efforts of an expert rat-catcher failed to trap any in the house or garden. Three rats and two mice caught at some distance from the infected house showed no evidence of leptospiral infection, and animal inoculation of kidney emulsion and urine proved negative in each instance. The house cat fell under suspicion on account of illness, but as a carrier it was definitely excluded. Water from the cistern and from the taps in the house and garden was examined. Nothing of a suspicious character was found, and animal inoculations with several samples from these sources were negative. At a later visit to the house mention was made of a child visitor, Case A, from the Malay Peninsula, in July. It was recalled that Case B fell ill about a week after the departure of the visitor to Wales, and it was mentioned that the visitor had not only been ill during the voyage, but also slightly indisposed on the visit. Hence it was thought advisable to try to get a specimen of blood for serological tests and a sample of urine if possible. Dr. W. T. Benson, assistant medical officer of health, was advised and he communicated with the local public health authorities in Wales. A specimen of urine only was received early in August. Dark-ground examination revealed a few non-motile spirochætal forms presenting a granular appearance. Stained films confirmed the presence of undoubted spirochætes, but here again we could only say that they were suspiciously like leptospiral organisms. The urine gave no bile reaction but was distinctly acid. Two animals were inoculated; both remained alive and well. The results of this part of the investigation throw suspicion only on Case A. Since this outbreak the rat question locally has been most extensively studied, and the findings indicate that this agency cannot entirely be ignored. No rats, however, have so far been caught in this residential district, and the existing conditions make this source highly improbable. We are therefore of the opinion that the more likely source of infection in this outbreak was the visitor from a part of the tropics where the occurrence of leptospiral infections has already been recorded.

COMMENTS ON THE FINDINGS.

The investigation has disclosed certain notable features. Although blood was obtained from two cases on the fourth day and from another on the seventh day of illness, both direct examination and animal inoculations of the blood were negative. The failure to infect guinea-pigs inoculated at this stage is not in accordance with the results of other observers; personal experience has proved, however, that some guinea-pigs are insusceptible. Diagnosis by direct blood examination has not succeeded in any case so far. Inada found that spirochætes were usually few and difficult to detect in the blood and reported their presence in only two out of a hundred cases.

A definite diagnosis by urinary examination and animal inoculation in these as well as other cases has constantly presented difficulties, attributed partly to the reasons already mentioned. These reasons may account for the difficulty in infecting animals, but apparently did not apply to human infection in this outbreak. The infectivity of the spirochætes may depend on the period of time they remain influenced by the destructive action of acid and bile in the urine before experiments are performed. Previous investigators have observed that two-thirds of positive urines, some with many spirochætes, failed to infect guinea-pigs. One particular urine from a case in the writer's own experience contained degenerated and granular spirochætes in masses, but inoculation failed to infect in six animals; this urine was very acid and gave a marked bile reaction.

Another notable finding was the presence of spirochætes in the urine of Case E up to the sixty-sixth day. This is unusual, as the Japanese workers observed that the spirochætes invariably disappear completely from the urine after the fortieth day. In one instance, however, they reported the presence of spirochætes up to the sixty-third day. In view of these exceptions, therefore, the visitor from abroad may be considered another instance in which the elimination of spirochætes was singularly prolonged. Subsequent events point to Case B as the probable infective agent in four of the patients—viz., C, D, E, and F. This probability is based on the possible infectivity of the urine over a certain interval. Three members of one family and one child of the other became ill on different days in the same week, and from 27 to 31 days after Case B fell ill. As the incubation period appears to be between six to eight days the period of invasion would thus coincide with the interval between the nineteenth and twenty-third day of illness in Case B. Although the urine of this patient was not examined then, it is highly probable that spirochætes were present, as they were found on the thirty-fourth day of illness. The two families affected lived not far distant from each other, which allowed the two youngest members of each family to play frequently together. It is a remarkable fact that in this second household an interval of 27 to 30 days again elapsed before the older brother and sister of Case F became ill. Spirochætes were found in the urine of Case F on the eighteenth day. Such a course of events suggests infection by contact with human cases and the agency of spread points to the urine. The path of invasion was not manifest, although distinct palatal hæmorrhages in one case may have some significance in this respect. The spread of spirochætal jaundice by contact with human cases is considered most unusual; the urinary findings indicate a possible reason for this, but the history of this outbreak tends to indicate that such a mode of spread is liable to occur. In Japan cases have been noted in several members of a family, but those affected became ill at the same time or at an interval of one to two days. The source and mode of infection in such cases was not known.

We desire to thank the Committee of the Royal College of Physicians' (Edinburgh) Laboratory for the facilities afforded in carrying out this investigation, and the Medical Research Council for pecuniary assistance.

NEW CHILDREN'S WARDS AT NORWICH.—H.R.H. Prince Henry has laid the foundation-stone of a new children's block at the Norfolk and Norwich Hospital. There will be five wards containing a total of 30 beds, and plate-glass partitions will enable any one of the divisions to be immediately isolated. The whole of the south side of the wards will be made to open, to facilitate open-air treatment. The block is being paid for with a donation of £10,000 from Mr. Lane, of Swaffham, and Mr. Simpson, of Sheringham.

FREEMASONS' HOSPITAL.—The £120,000 needed for the endowment fund have now been secured, but during the past year expenditure exceeded income by £2579. More beds have been provided and an extension will shortly be necessary—the waiting list is always considerable, and the hospital is at present practically confined to surgical cases. In the last 12 months 171 additions have been made to the list of Founding Lodges, but Dec. 31st next is to be the latest date at which a lodge can become a Founding Lodge.

PROCEEDINGS OF THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.*

(*Continued from p. 457.*)

BEFORE coming to the evidence of the Controller of Insurance in regard to the Approved Societies and the evidence of the societies themselves, we give hereunder a short summary of the official evidence given by the representatives of the Ministry of Health in regard to Medical Certification and the duties of the Regional Medical Staff, both of which subjects bring the insurance practitioners into indirect relationship with the Approved Societies.

Medical Certification.

(Q. 1208–13 and App. C. 50–70.) The provision of medical certificates, to enable the insured person to claim during illness payments which are known as sickness and disablement benefits, is part of the contract with the doctor covered by the general capitation fee. He is required under the rules to certify that a patient is incapable of work by reason of some specific disease or mental or bodily disablement. The cause of incapacity is to be stated as precisely as his knowledge of the patient permits. There are separate forms for first, intermediate, and final certificates, and for those to be given in cases of chronic illness and of convalescence, and in other special circumstances. Where practicable, the certificate must be given to the patient at the time of examination, and in other cases the certificate must be sent or given to the patient within 24 hours of the time of examination.

Asked whether the arrangements are working satisfactorily Dr. Smith Whitaker said :—

(Q. 1210.) I think, so far as the Department are concerned, they are working as satisfactorily as you could expect any system to work, having regard to the difficulties of the conditions we have to deal with. So far as the doctors or the societies are concerned, I do not think one could say that they are entirely satisfied with the arrangements. The doctors complain that they have found the arrangements irksome, but I think that both with them and with the societies the difficulty arises from the fact that they have not appreciated the necessity for the restrictions; and in some cases society officials who have not appreciated the importance of carrying the system out thoroughly have, through their insured members, pressed the doctors to give certificates in a way that is irregular.

In the proceedings before the Court of Inquiry into medical remuneration last year, there were complaints by societies in general terms that doctors gave certificates too readily, but otherwise there are not many such complaints, because a society that is dissatisfied with a doctor's certificate refers the case to one of the regional officers to get the question of incapacity tested. There is a certain amount of vagueness observed on occasions in the description of the cause of incapacity, but there are not many complaints received from societies on the ground of inadequate description. Complaints from an insured person that he has been refused a certificate are rare. Certificates from a non-panel doctor will be accepted by societies.

(Q. 1260.) One of the commonest causes of trouble with the doctors arises from the fact that an insured person does not ask for a certificate at the proper time and is faced with a difficulty later on when he realises that he has a claim to make against his society for sickness benefit. A doctor's certificate must relate to an examination made at the time of giving the certificate and not to some previous occasion. The difficulty may be met by the doctor giving a "voluntary" certificate and forms for this purpose are provided.

(Q. 261–3.) The function of the certificate from the point of view of the society is to enable them to be satisfied that the insured person is incapable of work. The decision is the society's and not the doctor's.

Meaning of "Incapable of Work."

(Q. 295.) The Controller, in his earlier evidence, was asked how the phrase "incapable of work" is, in fact, interpreted under the guidance of the Ministry by the Approved Societies. He said that the rule now generally recognised is that in the earlier stages of an illness the insured person should be totally incapable of following his own occupation. If after a certain time it appears to the society that a member will never be able to resume his own occupation, the society must then apply its mind to the question whether the person is incapable of any other kind of work, and whether that work is available for that person.

(Q. 296.) Could it be put like this . . . that in practice . . . "incapable of work" means physically incapable of doing work which in the circumstances at the moment could be regarded as reasonably open to the insured person?—That is a fair definition.

(Q. 297.) It comes very close to that?—Yes; but I think in the earlier stages it is limited and the society only looks at his normal occupation.

Twenty Million Weeks of Incapacity.

(Q. 273.) Elsewhere with regard to the working of the certification system, Sir Walter Kinnear said:—

I think with regard to the question of medical certification, speaking quite generally, and bearing in mind the fact that in England cash benefit is paid each year in respect of about 20,000,000 weeks, the medical certification system is working well.

The Regional Medical Staff.

(App. C. 170–175.) The Regional Medical Staff was appointed, primarily, to meet the need—which since the inception of medical benefit in January, 1913, had been repeatedly expressed by Approved Societies and by doctors—for a body of medical referees, who would advise in cases of doubtful incapacity for work, and also in cases of admitted incapacity in which it appeared that a second medical opinion might contribute to the restoration of the patient's working capacity. A whole-time staff of 33 Regional Medical Officers was established in 1920 for England and Wales, with 5 Divisional Medical Officers having supervisory functions. There are also certain part-time referees employed as occasion requires.

The duties of the Regional Medical Staff, in their capacity of referees, fall under the two heads of (*a*) advising in cases of doubt as to incapacity for work, and (*b*) advising on questions of diagnosis and treatment. References under either head may be made either by Approved Societies in respect of their members or by insurance practitioners in respect of insured persons under their care. The whole-time officers have other duties—e.g., the inspection of medical records and duties in connexion with excessive prescribing.

Number of Cases Referred.

The number of cases of doubtful incapacity referred in 1923 in England and Wales was 146,000. Of this number, in 60,000 the insured person failed to attend for examination, and, of the remainder, in 64,000 the patients were found to be incapable of work and in 22,000 not incapable.

(Q. 1298.) The numbers give the impression that quite a large proportion of the patients on being told to go to the referee at once declare off rather than face an ordeal in which they have reason to think they will be found out. It was suggested to the witnesses that there might be some explanation in the way of delay by the societies in referring the cases. As to this, the witnesses said :—

In a batch of cases in which inquiry was made . . . we found that out of 2600 cases in a 12-month period about

* In previous articles the proceedings of the Commission were reported under the following headings: Introductory Note; The Scope of the Insurance Scheme (see THE LANCET, Jan. 31st, pp. 247–8); The Provision of Medical Benefit (Feb. 7th, pp. 301–3; Feb. 14th, pp. 355–6; Feb. 21st, pp. 403–5); Financial Provisions of the Act (Feb. 28th, pp. 454–7). References to the official statement which has been issued as an appendix in four sections are given thus: Section A, para. 69, is shown as "App. A. 69," and references to the oral evidence thus—Q. 1369.

17 per cent. had declared off before they received our notice that they had been referred, and about 7 or 8 per cent. were unfit to attend. The total number of those who did not attend for examination was 46 per cent. That leaves 21 per cent. [i.e., 46–25] not accounted for by those two facts. Of the 21 per cent. a considerable proportion . . . were people who were on the point of declaring off or were nearly well and went back to work rather than have the trouble of facing an examination, or because they felt quite sure what the result of the examination must be.

There are also undoubtedly some cases where persons will forfeit their benefit rather than face an examination by referees.

(Q. 1472.) As to the cost of the system, the Approved Societies make a direct contribution of a fee of 1*s.* 8*d.* for each examination and also bear the cost of the part-time referees and other expenses which are specially attributable to the reference side of the work. That includes the cost of travelling expenses of insured persons, the cost of fees of nurses, and the rent of premises used exclusively for examination.

Referee Work and Certification in Scotland.

(App. II. C. 43.) In Scotland five District Medical Officers—corresponding with Regional Medical Officers in England—were appointed in 1921. Arrangements were also made for medical inspection rooms at two local centres in hospitals, infirmaries, &c., situated in other parts of the country. The extreme north of Scotland and other remote areas were excluded from the scheme owing to their insured population being so widely scattered. Examination of cases is sometimes undertaken in these excluded areas by a member of the Board's headquarters staff in conjunction with other business, special journeys and expenses being thus avoided.

(Q. 2017–8.) As to certification generally in Scotland, Sir James Leishman said that the system is working fairly satisfactorily, but there is an underlying current of dissatisfaction with regard to certificates. The number of formal complaints from societies is small. When there is complaining in general terms about lax certification the Board direct the attention of societies to the fact that they have a three-fifths representation on Insurance Committees and that those are the proper authorities before whom complaints should be laid for formal investigation.

(To be continued.)

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

FURTHER SITTINGS.

(Continued from p. 405.)

THE sittings of the Commission were resumed on Feb. 24th, the chair being occupied by Mr. N. Micklem, K.C.

Before hearing evidence, a man who said he was a member of the Bar and sent up his name, asked for permission to give evidence, at a time convenient to the Commission, as to what took place behind the scenes. Mr. Micklem promised that after discussing the matter with Mr. Macmillan, the Chairman of the Commission, he would communicate with the applicant.

Evidence from the National Asylum Workers' Union.

Mr. Gibson, secretary of the National Asylum Workers' Union, with a membership of 11,000, tendered information on the Union's objects and the conditions of employment of those engaged in institutions for mental care. The Union's suggestions included the following: (1) The administration of the Lunacy laws, the care of the insane, and the coördination of research into the diseases which should be directed from a centre. Failing the complete nationalisation of mental hospitals, the Government grant should be increased to 50 per cent. of the maintenance cost, conditional on the approval of the Board of Control. (2) Mental health authorities should have powers to inquire into the incidence of insanity in their own areas and to provide outdoor clinics in all mental hospitals under their control; also to organise such clinics in association with general hospitals. A lunacy rate should be leviable, and there should be power to commit patients for a time for treatment without their being certified. (3) There should be an end of mental hospitals run as profit-making institutions, as there were risks of grave abuse. (4) In many curable cases the certification as paupers had a detrimental effect on the patients. (5) The attention of medical men in institutions should be confined to medical affairs, though they might remain the acting disciplinary authority, and they should have the power of suspension only. (6) There should be a legal minimum proportion of medical officers and nurses, and 50 per cent. of the total nurses should be qualified mental nurses. He thought local authorities should be empowered to deal with incipient insanity, and to collaborate with the Board of Control in its work. Private mental hospitals, he said, were frequently changing their staffs, and but little effort was made to engage and retain qualified mental nurses, and the great safeguard of personal liberty, visitation by a publicly-elected committee, was not operative in them. In some mental hospitals the training given to the nurses was very casual. This was largely because the medical staff was too small to even attend adequately to the patients. In one institution with 600 patients there was only one assistant to the medical superintendent.

Answering Mr. Micklem, Mr. Gibson said that, speaking generally, the conditions were more satisfactory on the male nurse side than on the female side, and that few matrons were really satisfactory. On that side, too, there was a tendency to retain on duty officers who were too old for the work. In many mental institutions the patients were, in the witness's view, put to bed far too early—i.e., 7 to 7.30. If they were allowed to stay up longer he thought there would be less need for hypnotics.

Mr. Micklem questioned this witness and Miss Maud Wiese, a chief charge nurse at Claybury, on the subject of the employment of female nurses on the male side in mental institutions, and Mr. Gibson replied that he had yet to meet the medical superintendent who would allow his own wife or daughter to nurse in a male mental ward. Generally speaking, asylum workers regarded the practice as objectionable, especially as 10 per cent. of all male cases of insanity were of syphilitic origin, and an even larger proportion were sexually abnormal. Female nursing in male mental wards was commoner in Scotland than in this country, and there, he contended, the effect upon the patients was disastrous. Miss Wiese declared that this work on the male side was very degrading and repulsive to women, and that they should not be required to do it. Generally, Mr. Gibson said, the relations between nurses and patients were, so far as he had seen, friendly.

Mr. Micklem asked Mr. Walter Blood, the President of the N.A.W.U., whether it was true, as had been alleged, that if patients incurred the displeasure of attendants, when the time came for the question of their discharge to be considered, the attendants concerned kept them back so that they were not seen by the visiting committees or doctors. Mr. Blood replied that he did not think that was possible; it certainly had never happened in his experience. Nurses were not consulted at all about the discharges. As soon as a patient showed reasonable improvement he was placed in the convalescent ward. Mr. Blood, in answer to a further question, said he had never known croton oil used. Occasionally a sleeping draught was given, but only in the night. Mr. Gibson said nowadays every dose of medicine, even an aperient, was prescribed and sent from the dispensary

labelled with the patient's name. If not used, it was returned to the store. It was possible for two patients to keep a whole ward awake, and sedatives were then required.

Questions of Cruel Treatment.

Mr. Gibson said that the mental nurse had to endure abuse and assault daily, and occasionally the tendency to retaliate overcame the will-power. This was not by any means common. The qualities required of the mental nurse were of the highest; tact, forbearance in the face of vile abuse, kindliness even after savage assault, firmness and endurance. The hours at present operative were, he said, too long, and the wages too low. He compared the training and conditions of the general nurse with those of the mental nurse. He strongly urged the adoption of the three-shift system in mental hospitals, to ensure the fullest justice to the patients. Among other recommendations made by the body he represented were an improved dietary, and especially the provision of supper of a light character about 8 P.M.; better clothing and more outdoor recreation, such as bowls and tennis; also that the nurses' homes should be apart from the institution. There should be, in addition, it was suggested, an extension of the principle of single care.

In reply to questions Mr. Gibson said he thought the Board of Control should be strengthened; at present it had no directing authority over other bodies. If an institution did not satisfy the Board, the latter should have the power to withhold the grant. He did not think there should be an opportunity of profit-making out of a disease affecting the mind. He believed that frequently patients' friends paid at these institutions for services which were not rendered—e.g., though payment was made for a special nurse, it was easy to put the patient concerned into a general ward. The friends who made complaints usually did not desire to be personally implicated in an inquiry which might follow. A frequent cause of changes in staff was that the nurses got to know too much about the administration. He said he knew that some able medical men were very indifferent administrators.

In answer to Sir Humphry Rolleston, Mr. Gibson said the desire was that the outdoor clinics should be associated with both general and mental hospitals.

The Commission resumed its sittings on Wednesday, Feb. 25th, when Mr. H. P. Macmillan, the Chairman of the Commission, presided.

A Question of Procedure.

The Chairman intimated that in consequence of the experience already gone through in the case of the first of the six witnesses which the National Society for Lunacy Reform named it had become necessary to re-consider the Commission's procedure. Three days were devoted to Mr. Holman's case, on only one of which the witness attended, and complaint was made of the inconvenience he had experienced owing to his case having been gone into publicly, and the indisposition following his appearance and cross-examination compelled him to give up the fight. Moreover, it had been found that the procedure adopted created an atmosphere of controversy and recrimination which the Commission could not allow to recur, and they would not take the responsibility of permitting ex-patients to be exposed to the ordeal of public examination. Therefore in the remaining cases the Commissioners would themselves examine the witnesses in private, though the Chairman and counsel for the National Society tendering the witnesses would not be excluded from the inquiry.

Evidence of Dr. Montagu Lomax.

The Commission then proceeded to take evidence from Dr. Montagu Lomax, author of "The Experiences of an Asylum Doctor," a book which was published in 1922. He said his experiences had led him to the view that the present system stood in need of reform, and if the kind of reform he hoped for were brought about the office of superintendent would be separated from that of the executive chief, as the latter interfered with his special medical activities. He agreed that some of his objections to the combination of medical and executive functions would disappear if large county mental hospitals were replaced by the modern villa asylum, with a limited number of inmates. He said he strongly recommended that cases sent into hospital by a medical man for treatment in the incipient stage should remain under his care while they were in the hospital, so that he might study them there and follow them up. He thought the inspections of visiting committees should be less formal than was at present the case, and, wherever that was possible, the visitors should be unaccompanied by members of the staff. His experience was that visiting committees hurried through the wards with an attendant, and said a few words to any who chose to speak to them, but were glad to get away again. It was little short of a farce. The matter was different when the visitor showed himself kindly disposed towards the patients, who were quick to discern it. Pressed by the Chairman for suggestions for bringing about improvement, Dr. Lomax said that special attention could be given to border-line cases, and visiting committees should set aside certain times for hearing complaints of patients; a kind of small appeal court. A classification of cases could be made beforehand, so that there need be no loss of time. He believed very few complaints of ill-treatment were made to the doctor. He would abolish the formal dinner to the visiting committee, a function which occupied a good deal of time, and militated against the serious purpose of the visit.

Lord Russell said that on his own visiting committee that was not so; the meal was not prolonged, and the time was occupied largely in a talk about the cases.

Dr. Lomax thought that all mental hospitals ought to be under the control of the Ministry of Health. Asked by Lord Russell whether he thought more frequent visits, such as fortnightly, would be a help, the witness said he did not think it would work, as the members of visiting committees had their own work to do. He strongly favoured the coöption of women on these committees. One woman visitor, at Hull, paid a visit to the asylum at 7 o'clock in the morning. She was kept waiting in a side room 25 to 30 minutes while preparations were hurriedly made for an inspection. He agreed with Mr. Gibson (who was examined shortly before) as to the need of a 48-hour week, but he had not the same view as to the value or adequacy of the nursing certificates to stamp nurses as efficient. Many of the subjects required in the schedule it was not necessary for nurses to know. He would have general hospital nurses with a special training in mental nursing. The possession of a certificate often made a nurse feel she was a very important person, and this detracted from her efficiency. The possession of some of the milk of human kindness was worth all the badges in the world.

The Chairman pointed out that it had long been urged that nurses should reach a certain standard of efficiency, and accordingly an Act was passed, and then it was said this was not a test for ascertaining whether a person had the real nursing vocation.

Dr. Lomax replied that experience showed it was not the nurses holding certificates who made the best nurses from the patients' point of view. And the examination itself deterred many people from entering the nursing profession. He would have entrants sign a contract to stay for at least a year or two. Much more supervision should be exercised so as to ascertain the characters of would-be nurses. Sometimes advertisements were seen for nurses who were not required to have had any previous experience. He would secure the right type of people by making the service more attractive, giving better pay, and shortening the working hours. Until recently the nurses had been

almost as much neglected as the patients. It was one of the hardest services in the world, and those engaged in it deserved the thanks of the community. They ought not, he thought, to be taught so much psychiatry, certainly not until the doctors themselves were more agreed about it. In some cases lectures to nurses were given by an attendant.

Alleged Ill-treatment of Patients.

The Chairman asked the witness whether, when he was an official in an asylum, he saw any cases of ill-treatment, under his own eyes, by an attendant, and the witness replied that he did not see any cases, and that a doctor never did—indeed, he was the last person in the world who would. He suspected ill-treatment in a few instances. He feared that in most instances of ill-treatment the patient was too cowed to make a complaint to the doctor or the superintendent, fearing what would happen to him at the hands of the attendant afterwards. Asked by the Chairman whether instances of ill-treatment while he was a doctor in an asylum would not be of more value than hearsay evidence of alleged cases years after leaving asylum service, the witness said he saw the Chairman's point, but while engaged in the work he did not suspect what he now believed went on in that way.

The Chairman said it was a serious allegation that attendants were cruel to patients.

Dr. Lomax said he was only giving experiences which had been related to him. He could not possibly prove these things; but he had patients to produce who would, if allowed, give first-hand evidence of the ill-treatment to which they had been subjected and which they had seen.

The Chairman said the Commission was satisfied that cases of cruelty, possibly of gross cruelty, did occur; they must inevitably happen, just as accidents might happen on the best administered railways in the world. The great point was as to how ill-treatment could be stopped, or at least diminished.

Answering Lord Russell as to what value the witness attached to statements of patients on this question, he said he attached the greatest value to them; it took him two years to convince himself that this cruelty went on. He thought that in every case the patients were telling the truth. They had, since leaving the mental institutions, lived sane lives.

In reply to Mr. Snell, he said his allegations as to cruelty must certainly be taken to include the female side. He asked that the Commission would hear not only ex-patients, but also ex-attendants. The remedy would not be found in the Commission's report, but by an aroused public opinion which would be expressed on a note of indignation, even horror, that these things could happen.

Ex-attendants to be Heard.

After the luncheon interval the Chairman said that his colleagues were impressed by the suggestion that one or two ex-patients and one or two ex-attendants should be examined, and invited Dr. Lomax to furnish names and addresses of such and they would be officially requested to attend.

Continuing his evidence, Dr. Lomax said there were hundreds, even thousands, of cases of cruelty in mental institutions, and the Chairman remarked that the making public of such a statement would have a most unhappy effect in many homes, probably deterring people from sending relatives to these institutions when they needed treatment. Dr. Lomax said he did not wish to convey that impression. Continuing, the witness said that in cases of ill-treatment it should not be optional on the asylums committees to ask for a prosecution; when there was evidence of such conduct there should be an obligation to place the case in the hands of the police.

Lord Russell asked whether the witness would have a prosecution undertaken when it was practically certain there would be no conviction, and the witness replied that the onus should be on the judicial authority. He would be satisfied if, in a case deemed suitable for prosecution, all the papers were laid before the Public Prosecutor, leaving further decision and procedure in his hands.

Considerable argument followed on the question of alleged wrongful detention, the Chairman setting out the conditions of the harmless but certifiable person, and the witness said he favoured the boarding-out system as operative in Belgium, the patients being detained in such places as uncertified, so avoiding the stigma. He would have these patients remunerated for what they did.—Lord Russell said that in that case the trade-unions would have a word to say.—Dr. Lomax went on to say that when he was a doctor in Prestwich Asylum there were two or three inmates whom he considered sane, and he recommended their discharge, but no notice was taken of his recommendation. As soon as his book was published, however, two of them were discharged. He did not write about them to the Board of Control when he was in the asylum, and after he had left it was not his job.

The Chairman quoted from Dr. Lomax's book a passage in which the author spoke of a patient who had been in the asylum for a year and whom he considered sane, but as he deceived him, the doctor, he kept him back from discharge another two months as a punishment. The witness said it was a case of malingering, the man having obtained admission into the asylum to escape the clutches of the law. He was closely questioned as to this. Dr. Lomax further said he considered that under the present law people could be far too easily put away in asylums and kept there, and the medical superintendent's powers were too autocratic. He proposed that there should be at first a single medical certificate, called a preliminary detention certificate, to be required in the case of any person with suspected mental disorder before he could be admitted into a mental institution, and it should give the medical officer in charge of the institution power of detention for three days. This certificate should be signed by the usual medical attendant, and it could be supplemented, if desired, by a second certificate. He thought it was absurd to suggest that two doctors should not consult before issuing a certificate; the objection was not made in the case of bodily illness. A second certificate should be required after 28 days, if the patient had not meantime been discharged, and this should be signed, where possible, by a diplomat in psychological medicine, and counter-signed by a magistrate. He did not think it was desirable that a patient should know all that was on the medical certificate, but he could be told the general reasons why he was being detained. He, the witness, believed that people would sooner have their liberty safeguarded than feel they were tending towards cure, although he realised cure would bring liberty. His great point, he said, was that every mental patient should have 28 days in a sort of half-way house for observation and preliminary treatment. Such places should be separate institutions, but he realised the practical constructional difficulties. The fresh air of mental institutions would be preferable to the surroundings of large general hospitals in cities. Voluntary boarders entering these observation buildings should sign a document conferring the right of detention for 28 days, so as to safeguard from a sudden attack of insanity of an impulsive character.

The Chairman said he had been very favourably impressed with the graduated system adopted in the case of recovering patients at Ewell, where there were a series of villas.

Dr. Lomax cordially agreed with the suggestion that there should be district commissioners of the Board of Control, vested with powers of supervision, and subject to the central board. It would add greatly to visiting efficiency. Speaking of private asylums, he said he had been to see patients in private asylums, and all those he had seen were quite well conducted. He believed that the private asylums of

England were conducted as well as were those in any part of the world. His objection to private asylums was the presence of the financial motive. He agreed, however, that a good recovery-rate, which was universally sought after, did not support an allegation of a financial motive for keeping patients after they had recovered.

The Chairman questioned the witness on his statement that owing to the absence of safeguards doctors were refusing to certify to insanity at all, and Dr. Lomax replied that the system he suggested, of first having the patient under observation, would only require that the doctor should certify a case as detainable for a time. The Chairman rejoined that this would still fail to prevent the doctor being shot at, and the witness agreed.

The next meetings will be held on March 10th and 11th, at 5, Old Palace Yard, Westminster, at 10 A.M. each day.

MEDICINE AND THE LAW.

MEYRICK *v.* DYSON.

BEFORE the Lord Chief Justice and a special jury, Dr. F. R. H. Meyrick sued Mr. F. C. Dyson, a provision merchant, of Stoke Newington, for £125 10*s.* 5*d.*, as a balance due for medical attendance, board, and lodging for the defendant's son, Herbert Dyson, and for money paid on his behalf. Dr. Meyrick treated Herbert Dyson, who had been certified, from July 25th to Oct. 2nd, 1923, at his house in Ennismore-gardens, which was mainly used as a home for the treatment of nervous disorders, but in which he was permitted by the Lunacy Commissioners to receive one certified patient. The defence and counterclaim of the defendant alleged that the patient was to occupy a certain bedroom and be treated at 12 guineas a week under a verbal agreement, and that there had been breaches of the agreement and negligent and unskilful treatment in the following respects: that the patient had been moved to a small bedroom in an attic and given a bed too short for him; that the plaintiff had improperly administered hyoscine and morphia; that he had placed him unlawfully under mechanical restraint, and had kept him locked in his room, and alone; that he had not provided proper medical attention or food, and that the staff of nurses and servants was inadequate; that he was not taken out of doors and given sufficient exercise; that the plaintiff was frequently under the influence of drink and was unfit to be entrusted with the care of a person of unsound mind; that he kept the patient under drugs in order to save himself trouble and expense. The counterclaim was for damages for deterioration of the health of the patient in consequence of the above.

After a trial lasting nine days certain questions were left to the jury, whose replies are given below. The Lord Chief Justice, it will be seen, reserved judgment.

The Case for Dr. Meyrick.

In opening the case for Dr. Meyrick, Mr. J. A. Hawke, K.C., gave an outline of the story of the patient's detention in the plaintiff's house and of the evidence to rebut the charges made by the defendant. He pointed out that the more serious of these related to the alleged drunkenness of the plaintiff, and to the improper use of drugs in treating the case.

Dr. Meyrick, giving evidence, described his qualifications and the nature of his house, and stated that his cases came from all the leading specialists of Wimpole-street and Harley-street, and that Mr. Dyson had said that he had been recommended to come by Sir Maurice Abbot Anderson. He had originally agreed to take the patient for 12 guineas a week, but it had been verbally arranged at an interview on August 9th that this should be raised to 15 guineas. He, Dr. Meyrick, had been told the case was a mild one. He had no padded cell, had only used wristlets and anklets on one patient, and had never used them on Herbert Dyson. The patient, who was 22 years of age, 6 ft. 2 or 3 in. tall, and weighed more than 12 st., had put on 5 lb. under his care; he was not fit to be sent out walking owing to his behaviour. To the witness's knowledge he was never locked in his room. A list showed that morphia and hyoscine had been injected on eight occasions, and on 17 hyoscine alone in mild doses. On Oct. 2nd, when the patient was removed, his parents were present and allowed themselves to be seen, which made the patient very violent, and at the father's request the witness administered an injection. There were four women nurses. Asked whether he was ever under the influence of drink, the witness answered "Never."

Cross-examined by Mr. J. D. Cassels, K.C., Dr. Meyrick said that chairs were used temporarily to lengthen the bed in the upper room to which the patient was removed when the other room proved unsuitable. Entries of "hypo-injection" in the report book for "hyoscine" were an omission by the nurse not intended as concealment. He did not know that hyoscine was not used at asylums such as Hanwell. Mr. Cassels stated that the report book showed 48 injections in 28 days and asked "would you accept it from me that such an amount and frequency of hyoscine and morphia treatment is unusual in a case of dementia præcox?" The witness answered, "No, I would not."

In answer to further cross-examination, Dr. Meyrick denied that wristlets or anklets had ever been used on Herbert Dyson, or that he had helped to put them on. He believed that a similar allegation was being made against him in another action by a woman patient. He said that if such restraint was used it had to be entered in a book in the case of uncertified patients, and denied that all such use was forbidden. The witness was cross-examined at length on the diet supplied, and of the recurrence of "cow's head" or bullock's head in the dietary. He stated that a nurse named Podd had been dismissed as not capable of looking after Herbert Dyson. He denied having ever returned home intoxicated, and put his arms round nurse Podd or kissed her. He never swore at the servants and never was drunk in his life. He admitted a conviction followed by a fine and suspension of his driving licence for being drunk when in charge of a motor-car, but denied that he was in fact drunk on that occasion. For his present action he had gone to the Medical Defence Union and retained Messrs. Hempsons to act for him, but had since changed his solicitors.

Dr. J. S. Risien Russell said that he had known the plaintiff for 20 years and had placed patients in his care, one being with him now. He had never seen anything wrong with the conduct of the plaintiff's home or heard patients complain. He believed Dr. Meyrick to be competent and had never seen him under the influence of drink. He had seen the patient Dyson before August, 1923, on three occasions. He then suffered from neurasthenia with symptoms of further trouble to come. Dr. Russell said that the use of sedatives depended on the state of the patient. In his opinion it was better to use them than to let the patient be terrorised by hallucinations day after day. It was far better in that class of case to employ sedatives than physical restraint. In his opinion, assuming his state to have been as alleged, the treatment of Herbert Dyson had been quite proper. Cross-examined, Dr. Risien Russell said that he considered hyoscine one of the most important remedies, most valuable at proper times in proper cases and proportions. He admitted a considerable difference of opinion among medical men as to its use, and regretted efforts, of which he had read, to do away with the use of it in asylums. It was preposterous to rob medical men of one of their most merciful and useful medicines, there being no alternative to hyoscine and morphia but physical restraint in violent mental cases. The alternative

in a certifiable case was to certify and place the patient in an asylum where there would be padded cells. He could not imagine anything worse than holding down by physical force or using a strait-jacket. As to wristlets and anklets, they might quickly subdue a patient who if held might feel he could get away. He agreed that they were not now employed for certified patients. He admitted that this view implied that they might be used in the case of a person of unstable or unsound mind indulging in violence, though not permitted for a person who had been certified. He would not have advised that Herbert Dyson should be kept alone in a room with the door locked. The short bed he would think right only as a temporary measure.

Dr. J. F. Woods gave evidence, in which he expressed approval of the use of morphia and hyoscine for violent patients.

Dr. J. C. Vaughan had attended at Dr. Meyrick's house in his absence and had given an injection of hyoscine and morphia to Herbert Dyson, who had attacked a nurse and had locked himself in his room.

Dr. E. W. Hedley said that he knew the plaintiff well, and had never seen him the worse for drink.

Dr. E. P. Scott had visited Herbert Dyson by the instruction of the Board of Control four times; on the last occasion the patient was not so well as on the first; he might have told the patient's mother that he had deteriorated. Personally he was against the use of hyoscine and other drugs, but had occasionally administered morphia and heroin. Cross-examined, Dr. Scott said he did not see the special book relating to seclusion, and did not see wristlets or anklets. He had entered in his report that there had been no seclusion, and must have been told so by nurses. He had to rely upon hearsay. In reply to the Lord Chief Justice, the witness agreed that superintendence such as his ought not to be exercised in a perfunctory manner. Dyson was the first patient he had visited thus. He had seen reports as to hyoscine and morphia being used, and had agreed with Dr. Meyrick that as the patient was going on satisfactorily the treatment should continue. He had not himself seen young Dyson in a condition in which drugs were needed, but relied on Dr. Meyrick who was in charge of the case. He had once asked about the dose, being biased against hyoscine, and had been told that the patient had been violent.

Dr. Mary Scharlieb had known Dr. Meyrick for about 15 years, and had visited his house. She thought him competent, and said that there was no ground for suggesting that he was given to drink. She thought the food must be good, as his patients had done well. She had not the slightest doubt that if the case were one of dementia præcox it was necessary to administer hyoscine and morphia. She would have administered them in the circumstances recorded in the manner in which they had been administered. There was nothing recorded to suggest that they had been used to save trouble.

Mrs. M. Miller, a nurse in the home, said that she had administered hyoscine and morphia to the patient under Dr. Meyrick's instructions. The food was good. It was not true that Dr. Meyrick was ever the worse for drink. Dyson had never been locked in his room or strapped down in his bed. Cross-examined, she said that wristlets and anklets had been used in "two other cases besides Mr. Dyson," and immediately corrected this statement, and said that they were never used for Mr. Dyson. She said she had made a mistake in saying "besides Mr. Dyson." She had never heard of their being used for him.

Several lay witnesses were called who had been treated or had had relatives treated, and who were thoroughly satisfied with the food, and had never seen Dr. Meyrick under the influence of drink. Captain Beddington had known Dr. Meyrick six years at his house and at his club; he had never seen him under the influence of drink. He had eaten good meals at Dr. Meyrick's house.

The Case for the Defendant.

Mr. Cassels opened the case for the defendant, laying stress upon the administration of drugs as being entirely improper, and upon the allegations of strapping down and of locking the patient in his room.

Mr. Dyson gave evidence as to the previous history of his son's case and his arrangements with Dr. Meyrick. He denied that on his first visit after his son had been received in the home Dr. Meyrick had complained of his son's habits, or said he must remove him to another room, or that he must raise his fees from the sum of 12 guineas per week originally agreed to 15 guineas. He denied that he had been told that the case was not suitable for Dr. Meyrick's home; he had been told that an extra nurse was required at 3 guineas a week and had refused to pay it. He stated that Mrs. Dyson had complained on Sept. 22nd of her son being drugged, and that Dr. Meyrick had been very angry. He described the scene at the removal of his son on Oct. 2nd, when he had asked Dr. Meyrick to give him a sedative as he was very violent, and had been made to sign a paper first requesting him to do so, as well as an undertaking to pay 5 guineas, because the plaintiff said his house was being disturbed. This claim was withdrawn in court by the plaintiff's counsel, his Lordship pointing out that in any case it had been made. Mr. Dyson stated that since leaving Dr. Meyrick his son had been better physically but not mentally. He criticised the accounts as to food to the effect that the prices showed that it could not be good. In cross-examination he said he had not removed his son sooner because he had not thought of doing so.

Mrs. Dyson, the patient's mother, in giving evidence, said that she had visited her son several times. She had not been satisfied with his accommodation. She had found him on Sept. 11th in bed in a dazed condition, and on another occasion outside his room refusing to enter it. She ascribed this to his wish to see life outside. He had shown her the marks of hypodermic injection on his arm. He was much better and had gained a stone since leaving Dr. Meyrick. Under cross-examination Mrs. Dyson said that her son was always more or less dazed and stupid when she saw him. She had not at first suspected the cause of this.

A brother of Herbert Dyson described the scene at his brother's removal from Dr. Meyrick's house.

Miss E. C. Podd, giving evidence, said that before going to Dr. Meyrick's in July, 1923, she had had four years' experience as a mental nurse. She sometimes took Dyson out for a walk; he gave no trouble but wanted to stay out longer, and once suggested having tea out. She was on night duty (9 P.M. to 9 A.M.) for three weeks from August 11th. She remembered Dyson having hyoscine and morphia injections, 42 in 28 days out of 69 days that he was in the home. She had used anklets and wristlets on four patients, including Dyson, always by Dr. Meyrick's instructions. She had found Dyson restless and walking about his room at night on August 9th; had got "the straps" by Dr. Meyrick's orders, and he had helped her to put them on the patient, after ordering him into bed. His hands and feet were put in the straps which were tied under the bed with webbing. They were used two or three times while she was on night duty, and she was told by Dr. Meyrick to use them if she had any difficulty. This was because the patient used to get up and walk about and switch on the electric light or look out of the window. The door of Dyson's room, as a rule, was locked, and the key kept on a ledge outside the door. Dr. Meyrick had told the nurses to lock it. There was no bell to the room; the patient had to knock on the door to attract attention, and he was visited by a nurse when there was an opportunity. On August 15th, at 5 A.M., he got up, broke a window and leaned out. She persuaded him to come in without trouble, after which Dr. Meyrick gave him an injection. She had told the plaintiff of Dyson's

wish to have tea out, and also to play the piano, but nothing was done. [At this stage the jury inspected the plaintiff's house.] Continuing her evidence, Nurse Podd said that on one occasion the patient attacked her in his room, took the key of it from her by force, and locked her in the room. She was certain that she had seen Dr. Meyrick intoxicated twice. On one occasion after attending a wedding he had smelt of drink, and had put his arms round her on the landing and kissed her. She had resisted and had afterwards told another nurse, Sister Charteris, what he had done. She spoke of another occasion when he had put his arm round her and called her endearing names over the banisters. Cross-examined, she said she knew of the duty to record the use of mechanical restraint, and that it was not right to lock a certified patient in his room. She had reminded Dr. Meyrick of the duty to write in the restraint book, and he had said that he did not keep one. He had told her not to enter it in her report book.

Miss R. Thompson, formerly a nurse at the plaintiff's house, said that she had gone into Dyson's room on one occasion in the morning and found him with his arms strapped. His door was always locked. In her opinion the food was very poor. She had seen Dr. Meyrick several times the worse for drink while Dyson was under his care. Cross-examined, she denied that she had been dismissed, saying that she had left because she thought the house was not a place where a decent girl ought to work, and on account of the company brought in at night by Dr. Meyrick.

Miss N. Charteris said she was a nurse at Dr. Meyrick's house while Dyson was there. His door was kept locked by Dr. Meyrick's instructions. She had been present when hyoscine and morphia were injected. They produced stupor for three or four hours, during which time nursing attention was not required. The plaintiff had complained, she said, of the expense of Dr. Vaughan being called in, and had said to her of Dyson, "Drug him well; you cannot kill a lunatic." She had seen Dr. Meyrick several times under the influence of drink. She had left without notice because the plaintiff had sworn at her, also because he ordered her to do things that were wrong.

Miss K. Pearce, parlourmaid and later cook at Dr. Meyrick's house from July 6th to Oct. 6th, 1923, described the food supplied for which a standing order had been given. She stated that Dr. Meyrick was often under the influence of drink, and that she had left because he had when in that condition used bad language to her in the kitchen.

Dr. F. Dillon described the condition of Herbert Dyson when at Northumberland House Mental Hospital as dull and mentally confused at first, but improving later, when he could play draughts and dominoes, and play on the piano. He had been given sedatives there, and hyoscine on one occasion.

Dr. Dillon described hyoscine as a powerful drug of uncertain action only to be used in emergency. He saw nothing in the reports of its use by Dr. Meyrick in the nature of evidence of excitement or of conditions that would render its frequent administration advisable. Hyoscine had been commonly used at one time, but was now discontinued in mental hospitals, as the opinion of medical men was against it. Asked by the Lord Chief Justice to define what he meant by the opinion of medical men, the witness explained that he meant the opinion of the majority. Some remained of the opposite opinion, but medical men in mental hospitals were opposed to the use of the drug, while those treating patients outside were in favour of its use. It was a question of experience. Cross-examined as to the evidence given by Dr. Risien Russell, the witness said that he gathered that Dr. Russell had said that the alternative to the use of hyoscine was a padded room and to let the patient exhaust himself. That was nonsense, as there were other alternatives to hyoscine. He admitted that at Northumberland House Dyson had been violent, doing damage, and also assaulting a medical officer. He had also had delusions, and had sometimes needed six attendants to restrain him. The doses recorded at Dr. Meyrick's were not excessive.

Dr. R. H. Cole confirmed generally evidence given by Dr. Dillon. He had not seen the patient, but had read Dr. Meyrick's report book. He never used hyoscine except in a case of emergency. It paralysed and produced hallucinations. It interfered with nutrition, and he had never employed it in a case of dementia præcox. The case of Herbert Dyson seemed to the witness to have been a bad case unsuited for treatment in a private house. It would be very bad for a patient with dementia præcox to be kept in one small room. The diet at Dr. Meyrick's did not appear to be generous. Under cross-examination Dr. Cole said that in a case of dementia præcox it might be dangerous to take a patient out, and that Dyson would have required a man on each side of him, and exercise in a garden. His case was not suitable for London. Asked as to whether many medical men did not think it proper to use hyoscine in cases of excitement, he replied that there were a few who thought so. He considered that Dr. Meyrick should have advised the father to have his son removed, and should have gone to the Board of Control if he refused. In the alternative he should have changed his drugs. Dangerous drugs should not be given day after day for three weeks.

The Judge's Summing-up.

The Lord Chief Justice, in summing up, suggested that there was a question whether it was desirable that private individuals should be allowed to undertake the detention of human beings for profit. The jury, however, were dealing with the difficult case before them and not sitting to inquire into the Lunacy laws. The burden of proof as to the allegations of breach of duty was on the defendant, who was entitled to expect a reasonable performance of his contract in every part of it, food, lodging, medical care, and attention. The allegations of the defendant affected many points, and the jury might think that where everything was complained of they could not pay much attention to a complaint about anything. The question of food had provoked humour, but food was no laughing matter for people who had to live in establishments of the kind described. The food of a first-class hotel was not, however, to be expected in a nursing home, and might not be suitable. His Lordship criticised the system adopted of working out averages of diet from the food accounts produced. It was impossible to exaggerate the importance of the matters at issue, particularly with regard to mechanical restraint and confinement. As to this they had to ascertain what was actually done in the case before them. With regard to the use of drugs, it was not for the jury to decide between rival schools of treatment. The allegation on the part of the defendant was that the drugs administered to the patient in question on the scale, with the frequency, and in the circumstances shown, were not genuinely dictated by the medical needs of the patient's case, but were suggested by the interest and convenience of those administering them. With regard to mechanical restraint, Lord Hewart pointed out that its employment was unlawful under the Lunacy Act, 1890, except in specified circumstances and with a record kept of its use. No entry as to the use of mechanical restraint appeared in Dr. Meyrick's register. If, therefore, the anklets and wristlets produced had been used for Herbert Dyson their use was unlawful. The instruments that might be used were set out in detail. It was suggested that if used they had done no harm. The plaintiff had stoutly denied that they had been used on Herbert Dyson, but had spoken of the effect that they produced when employed as mesmeric. The patients upon whom wristlets and anklets were used might resist other things, but were mesmerised by them. That, his Lordship said, was very signi-

ficant. Discussion took place upon a question raised by the jury as to whether they could find that the straps had been used, but not by Dr. Meyrick's orders. His Lordship said that no suggestion as to this had been put to the nurses when they gave evidence, but that if the jury came to the conclusion that they had been so used they might say so. With regard to the locking of the patient in his room, he directed them that this was seclusion and should have been recorded, but that this had not been done.

Questions Answered by the Jury.

Lord Hewart concluded by leaving to the jury a series of questions, to which, after three and a half hours' deliberation, they returned answers as follows:—

1. Did the defendant agree that the weekly payment to the plaintiff should be raised to 15 guineas?—No.

2. Was the plaintiff guilty of negligence or breach of duty in the matter of—

(*a*) the bedroom or the bed?—No.
(*b*) drugs?—No.
(*c*) medical attention?—No.
(*d*) food?—No.
(*e*) staff of nurses and servants?—No.
(*f*) drink?—No.
(*g*) confinement to bedroom and seclusion?—Yes; in that the door was at times locked, and the times not entered in the necessary book.

3. Were the anklets and wristlets put upon Dyson—

(*a*) under the plaintiff's instructions?—No.
(*b*) not under the plaintiff's instructions?—No.

His Lordship then told the jury that by their answer to Q. 1 the plaintiff's claim was reduced to £98 4*s*. 6*d*., and that they must now say by what amount that sum must be reduced owing to their finding as to the seclusion of Herbert Dyson in his room (Q. 2 (*g*)). The effect upon him of that seclusion, his Lordship said, was highly problematical. While the jury were absent considering this question, argument took place upon the findings set out above, as to whether the illegal seclusion and the failure to record it (Q. 2 (*g*)) did, or did not, go to the root of the contract, so as to disentitle the plaintiff from recovering anything. The jury having found that owing to the seclusion of the patient and the failure to enter it, the plaintiff's claim should be reduced by 20*s*., it was alternatively submitted on behalf of the plaintiff that he should have judgment for £98 4*s*. 6*d*. and costs of the issues on which he had succeeded, and on behalf of the defendant that if the plaintiff were held to be entitled to recover anything, the defendant should still be entitled to judgment for the 20*s*. under Q. 2 (*g*) with costs, and to the costs of the issue relating to the claim for additional weekly payments (Q. 1).

His Lordship intimated that the questions raised were of great importance and reserved judgment.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED FEB. 21ST, 1925.

Notifications.—The following cases of infectious disease were notified during the week, namely:—Small-pox, 149; scarlet fever, 1696; diphtheria, 1025; enteric fever, 48; pneumonia, 1473; puerperal fever, 34; cerebro-spinal fever, 13; acute poliomyelitis, 6; acute polioencephalitis, 1; encephalitis lethargica, 58; continued fever, 1; dysentery, 13; ophthalmia neonatorum, 124. There were no cases of cholera, plague, or typhus fever notified during the week. The number of small-pox cases showed a decrease of one from the number for the preceding week. Thirty cases were notified from Derbyshire, 31 from Northumberland, 13 from Notts, 49 from Yorks, North Riding (Middlesbrough, C.B., 47) and 15 from Yorks, West Riding.

Deaths.—In the aggregate of great towns, including London, there were 3 deaths from enteric fever, 76 from measles, 11 from scarlet fever, 130 from whooping-cough, 35 from diphtheria, and 352 from influenza, as compared with 354, 291, 202, and 195 in the four preceding weeks. In London itself the deaths from influenza numbered 88, from whooping-cough 45, and from diphtheria 8

Correspondence.

"Audi alteram partem."

THE ORAL ADMINISTRATION OF GLUCOSE.

To the Editor of THE LANCET.

SIR,—The observations of Dr. T. Izod Bennett and Dr. E. C. Dodds on the Oral Administration of Large Quantities of Glucose, and its Therapeutic Uses (THE LANCET, Feb. 28th) lend new support to the established practice of sugar feeding in conditions in which other foods are poorly assimilated. Sir William Osler, in the "Principles and Practice of Medicine" (eighth edition), advocated liberal carbohydrate and sugar feeding in typhoid fever some years ago. I agree, however, that the amounts employed are usually much too small. In a paper entitled the Value of Sugar in the Treatment of Typhoid Fever,[1] I drew attention to the importance of giving large quantities of sugar in febrile illnesses and laid particular stress on (1) its ease of assimilability, (2) the readiness with which patients take it, and (3) the counteraction of acidosis which it achieves. My observations were made on a large number of typhoid cases among Belgian refugees. I employed ordinary cane-sugar in quantities varying from 6 to 10 oz. a day in addition to other carbohydrate in the form of biscuits, chocolate, and bread given as bread-and-milk, and I was able to compare clinical results in my own cases and in other cases treated with the old-fashioned milk régime. I concluded that the liability to grave acidosis, to serious wasting and bedsores, and to muscular weakness and tachycardia during convalescence was appreciably diminished by a liberal ration of sugar, and that from 500 to 1000 calories per diem could readily be supplied in this form. Since then I have always urged a liberal use of sugar (as cane-sugar, glucose, or lactose) in prolonged fevers and pneumonia. It may also be helpful in some cases of heart failure. I have also shown [2] that a solution of cane-sugar produces an inconsiderable rise in gastric acidity when given as a test-meal and for this reason suggested its use in ulcer dietaries. I have not, however, employed it in cases of under-nutrition such as Drs. Bennett and Dodds describe; in such cases, and particularly in those with a psychoneurotic basis, it is presumably preferable to insist, as soon as possible, on a mixed dietary, but sugar in some form should be valuable initially in helping to overcome the general weakness and the associated anorexia. The cane-sugar was consumed with avidity by my typhoid patients, whom I frequently saw scooping the remaining grains from the bottom of their cups. The calorie-value of cane-sugar is higher than that of commercial glucose (10 oz. giving 1000 calories) so that smaller quantities can be used, and with sugar at 7*d*. to 8*d*. per pound the cost is about the same or slightly less.

I am, Sir, yours faithfully,

Wimpole-street, W., Feb. 28th, 1925. J. A. RYLE.

RHEUMATISM AND GOITRE.

To the Editor of THE LANCET.

SIR,—Perusal of your interesting annotation *re* "Cancer and Goitre" in THE LANCET of Feb. 14th reminds me that still more cogent evidence exists in favour of the possibility that a common factor may be involved in the incidence of goitre and *rheumatism;* and that a state of *hypothyroidism* favours the development of rheumatism.

The recent report of the Ministry of Health on the "Incidence of Rheumatic Diseases" reveals that alike in acute rheumatism (rheumatic fever), subacute rheumatism, cardiac rheumatism—muscular types as well as rheumatoid arthritis—the incidence is higher in *females* that males, and the same

[1] Guy's Hospital Gazette, Nov. 6th, 1915.
[2] Guy's Hospital Reports, 1921, lxxi., 158.

is true of osteo-arthritis in the *later* decades. As to rheumatic fever, it states: "Not only are our insured females from 16 to 24 attacked much more frequently (as 5 to 3) than insured males of similar age, but that in the next age-group, 25 to 34, females are attacked three times as often." The incidence of rheumatism between 10 and 15 years is higher also in *girls* than boys. That of rheumatoid arthritis, and to a lesser extent of rheumatic fever, is heaviest in the child-bearing decades, and of osteo-arthritis at and after the menopause.

In respect of *goitre*, too, we find the same preponderant incidence in *females* from childhood right up to the menopause with its maximum in the child-bearing decades. In short, the periods of increased incidence of rheumatism and goitre synchronise markedly with puberty, the child-bearing decades, and the menopause—viz., with those physiological processes menstruation, pregnancy, lactation, which determine oft-recurring or enduring hyperæmia of the thyroid. The increased incidence of *osteo-arthritis* in females at the menopause is doubtless dependent on the senile atrophy of the thyroid incidental to this epoch. *Clinically* speaking, the association between "rheumatism" and thyroid deficiency is intimate. The "rheumatic" child often shows minor signs of hypothyroidism. Again, rheumatic fever is often followed by a state of hypothyroidism, and I have noted the following peculiarities suggestive of a link with *goitre*. First, that in regions where *goitre is endemic*, the incidence not only of rheumatic fever and cardiac rheumatism, but of rheumatoid arthritis appears to be abnormally high. Secondly, that if rheumatic fever develops in the child of a *goitrous* mother it shows a strong impetus to chronicity, being rebellious to salicylates. Also, if it occurs in the child of a mother not necessarily goitrous, but resident in a region where goitre is endemic, it may show the same peculiarities. Thirdly, that this obduracy to salicylates relents if *thyroid* be superadded, the thyroid seeming to activate the otherwise impotent salicylates. As to rheumatoid arthritis and osteo-arthritis their association with hypothyroidism and often with goitre is well established, as also their favourable response to thyroid therapy.

As to geographical incidence, the findings of the report are somewhat suggestive. Thus, the death-rate from rheumatic fever and cardiac rheumatism is much higher in the North-West and South-West than in the East and South-East Counties. It is highest in Lancashire and lowest in Norfolk, but the former again falls below certain Welsh counties, notably Glamorgan. Finally, what is most arresting is that the death-rate in *females* from rheumatic fever and cardiac rheumatism in *Bristol* is immensely high even compared with Lancashire. The Cotswolds, the Mendips, and the valleys of the Pennines are all noted haunts of goitre. Now, Bristol lies partly in Gloucestershire and partly in Somersetshire, both counties in which goitre is endemic. Again, the river Avon on which it stands rises in the Cotswolds, coursing thence through Wilts and Somerset, and goitre is certainly endemic in some of the villages on or near its banks. This excessive incidence of rheumatic fever and cardiac rheumatism in a city lying in a *goitrous* district, and this among the *female* population, is very arresting. Viewed in light of the fact that rheumatic fever in children of the goitrous or those residing in endemic areas is rebellious to salicylates, but responds if thyroid be superadded, seems to suggest some ætiologic connexion between the heavy incidence of acute and cardiac rheumatism in Bristol, and the endemicity of goitre in the environs. The high death-rate of itself seems to predicate lack of response to salicylates, and presumably this obduracy must be due to some inherent defect in the female victims. May it not be that the females of the city are handicapped by an excessive liability to thyroid inadequacy or hypothyroidism? Hypothyroidic women tend to bear hypothyroidic children, and my experience leads me to believe that hypothyroidism connotes a special liability to rheumatic affections. Turning to Glamorgan, whose death-rate exceeds that of Lancashire, we find goitre endemic on the Barry Estuary; and again, Lancashire traversed by the Pennine range is also the seat of scattered foci of endemic goitre. On the other hand, the lowest incidence of rheumatic diseases is in Norfolk, Cornwall, and Anglesey, and as far as my information goes they seem exempt from endemic goitre. As to rheumatoid arthritis and osteo-arthritis their predominant incidence appears to be in regions traversed by the Cotswolds, Mendip, and Pennine ranges.

Further inquiry is obviously necessary, but I submit that the evidence adduced is such as indicates that here is a line of investigation that might throw a flood of light on the much needed prophylaxis of rheumatic fever and cardiac rheumatism.

I am, Sir, yours faithfully,

LLEWELLYN J. LLEWELLYN.

Upper Brook-street, W., Feb. 26th, 1925.

THE ACIDIC VALUE OF THE URINE IN SKIN AND OTHER MANIFESTATIONS.

To the Editor of THE LANCET.

SIR,—I had hoped that I had made it clear in my article in THE LANCET on Feb. 7th that I was working on the concentration of the hydrogen ions only, but Dr. Whitfield's criticism of it in your issue of Feb. 14th and also numerous letters that I have received have shown me that some readers of it have misunderstood me.

I have not been working on the amount of acid in the urine, I discovered long ago that this was not increased. I used the phrase "acidic value" so as not so frequently to reiterate the words "hydrogen-ion concentration" and "pH value," but it means the same thing. The tests, which now number some thousands, were carried out for me by two first-class biochemists, working independently, using the Clark and Lub colorimetric method, the results being checked electrically, showing that they were chemically and mathematically accurate.

If Dr. Whitfield will get his biochemical friends to work out the hydrogen-ion concentration of the urine in his cases of acne and seborrhœa he will find that 100 per cent. will give an abnormally high concentration. It is not a question of my opinion but a definite scientific fact which is very easily proved. Litmus is useless as an indicator for this kind of work, its range is too narrow, and has been given up by biochemists for nearly 20 years.

I have travelled much farther along the road since I wrote my article and realise more than ever the importance of testing specimens taken the last thing at night and the first thing in the morning. This is true both at the preliminary investigation of the patient's urine and while he is under the treatment with alkalies. At the times that a patient is usually seen the alkaline tide is at its height. One must be perfectly certain that alkalies have not been taken in any form before the first tests are made, or one's calculations will be upset; the amount taken may not be enough to clear up the lesions, but enough to bring the pH value of his urine towards the normal figure. When the patient is taking the alkali treatment it is sometimes found that either the night or the morning specimen is still abnormal, in which case an extra dose of the medicine must be given between 4 and 6 o'clock if it is the evening specimen that is abnormal, or the last thing at night if the morning specimen still has a high concentration. There will be little or no improvement in the patient's condition until his urine is normal for the whole of the 24 hours.

The only explanation I can offer to account for the negative results obtained by Dr. Whitfield and others whose patients did not improve on alkalies is that a sufficient amount was not given and that the urine was tested at the height of the alkaline tide, a fallacious value being thus obtained. If the readers

of my article will carry out my technique as advocated and will give alkalies in sufficient quantities to all their patients whose urine has a high acidic value they will be astonished with the results. Like Dr. Barber, I have found that when one starts a patient on alkalies the hydrogen-ion concentration of the urine tends to become higher; for instance, in a case of acne the pH value before treatment was 5·1 and three days later, after having taken large doses of alkalies, it was 4·7. As regards the alkaline tolerance, this is only comparative; it is very much higher than normal, but cannot compare to the enormous tolerance found in true cases of acidosis. In these cases it may take weeks with the patient on ounces of bicarbonate of soda a day before the urine reaches the alkaline side of neutrality, or it may never be reached. As regards cheiropompholyx, all those cases that I have seen since I started my investigations have had a urine with a high pH value. Owing to the intense irritation, however, the lesions are almost invariably scratched, infected with micro-organisms, and the skin sensitised. Thus, unless the patient is seen before this takes place, Dr. Barber is perfectly right in stating that alkalies alone will not cure the condition.

There is one fact that I have never seen mentioned and that is that seborrhœic cases have retraction of their gums, often to a very marked degree. This retraction, unlike that in pyorrhœa, is primarily along the roots of the teeth and not in between. As regards a clinical relapse due to over-treatment with alkalies, I stated that this was a rather rare result. I have only seen one well-marked case, this served as a warning of a possible danger and prevented me over-treating, although several subsequent cases were verging on a relapse; this was prevented by cutting down the treatment.

In my article, under the heading of acne, I stated that local treatment must be energetically carried out. In other words, that I do not consider alkalies alone are sufficient to cure the patient; therefore, Dr. Semon, even if he agrees with me entirely, is perfectly justified in using X rays as an adjunct.

I am, Sir, yours faithfully,

F. CARMINOW DOBLE.

Harley-street, W., Feb. 28th, 1925.

To the Editor of THE LANCET.

SIR,—The correspondence on the acidic value of the urine in skin disorders and other conditions raises points of far-reaching interest and medical importance, and I would like to make one or two comments on it from the standpoint of the general physician.

Twenty-five years ago I had the privilege of being the clinical assistant to the Skin Wards in the Royal Infirmary, under the care of the late Dr. Allan Jamieson, one of the pioneers of dermatology in this country. I formed then the impression, from the general study of the stools and urine, that the general run of skin cases were dependent upon a chronic constitutional disturbance, and required investigation and treatment from a rather wider standpoint than prevailed. I have a vivid recollection of furtive efforts I made to get some stools kept for a general examination, and after seeing them, or one might say coming within range of them, one could not help having some sympathy with the views obviously held by the members of the nursing staff as to the undesirability of trying to combine the work of the general physician with that of a special department. I later made some observations on a few selected cases coming under my own care, and published the results. These appeared to me fully to confirm the impression as to the general origin of these skin affections, this view being, indeed, held by a small number of dermatologists. Since that time there has been much work carried out, more especially by French physicians, emphasising the profound importance, and great value to the patient, of attention being directed to the subject along these lines, and one therefore welcomes the recent valuable work of Dr. Barber, Dr. Semon, and Dr. Doble on this subject. I believe it will mark an era of advance in our knowledge of the ætiology and treatment of skin disorders of far-reaching importance.

I have read with interest Dr. Whitfield's letter of criticism and appreciate the useful note of caution which it sounds, but in my view—assuming the complete correctness of the facts which he has personally observed—it may be possible to interpret his results in a way which does not seriously invalidate the general conclusions of his brother specialists. I may say I do not completely accept the interpretation of the results of the observations made by Dr. Barber and his colleagues, but it is more important at the moment to emphasise the value of their line of inquiry and the encouraging nature of the therapeutic results they have recorded. I would like rather to touch upon one or two points of a more general kind which have been brought out in their writings.

Dr. Barber has drawn attention to the information which may be obtained from testing the reaction of the saliva in cases of skin disorder. This is an observation which I am satisfied can be usefully extended to many other disorders. His reference to constipation and dyspepsia of the fermentative type as factors of importance in the causation of a seborrhœic state may, I believe, be very usefully extended to other common skin disorders as well as to other departments of general medicine and surgery. I assume that in using the word fermentative he includes dyspepsia arising from putrefactive changes in the bowel. A further point of great value was suggested in Dr. Doble's paper, where he indicated the results of his examination of the urine in cases of so-called nervous disorders. In your issue of Feb. 28th there is a note of unique interest in the letter by the late Sir Clifford Allbutt on Alkalis in Certain Diseases of the Skin in which an interesting clinical fact is recorded, the observation being recorded without explanation, but simply as an empirical result. In this connexion I would like to suggest to our neurological friends that if a consecutive series of, say, 50 to 100 neurological cases were examined from the wider standpoint of medicine heralded in the recent dermatological writings referred to, and the urine, stools, and saliva examined by a slight amplification of the comparatively simple methods described in the published communications in question, data of enormous value would be obtained in regard to nervous disorders, which would have results of far-reaching importance *re* our knowledge of the ætiology of the diseases and add enormously to our skill in their treatment.

I am, Sir, yours faithfully,

CHALMERS WATSON, M.D.

Edinburgh, Feb. 28th, 1925.

To the Editor of THE LANCET.

SIR,—Dr. Barber's letter in your issue of Feb. 21st opens up a line of attack along which the clinical observer may achieve victory over a common and yet too often undefeated malady. But before one can feel convinced that a specific, or even a certain, remedy has been found, the laboratory worker must enter the field and make innumerable painstaking tests as to the degree of acidity of the urine, and also hydrogen-ion concentration measurements. Next must be decided the precise amount of alkali suitable for each case. For, according to the conclusions of the article on hydrogen-ion concentration of the urine, which appeared in your issue of the preceding week, certain skin diseases are cured when the correct degree of alkalinity is reached, but made worse when this exceeds a certain point.

Three questions leap to the mind at once in this connexion: (1) Is not acidity present with many types of toxæmia, and does not such toxæmia exist

often enough with skin diseases to arouse the suspicion that they are causally associated? (2) Surely the acidity of the saliva, at any rate, exists quite commonly in individuals who have not suffered, at any time of life, from any form of seborrhœa, nor, indeed, from any kind of skin disease? (3) Why do many cases of acne and other forms of seborrhœa become cured without receiving any alkaline treatment? To quote a typical case taken at random from my notes:—

Miss R., aged 20, had severe hairfall due to seborrhœa of the scalp; her back was covered with papular acne and had been so for years. The hands were blue and cold, the pulse was always over 100. These latter signs, together with a slight enlargement of the thyroid, gave the clue to the toxæmia existing in her case. A diet of vitamin-containing foods was ordered, farinaceous foods and sweets reduced to a minimum. Parathyroid 1/10 grain and a tablespoonful of paraffin daily were the only internal remedies. Acne bacillus vaccine was given at weekly intervals for the scalp condition. Within a month the pulse had dropped to normal; within two months the acne spots had disappeared, no fresh ones had taken their place, the hair had become steadily less greasy and ceased to fall. Best of all was the progressive improvement in the girl's appearance—the clear complexion, rosy cheeks, the normal pale hands, the absence of thyroid enlargement; from being a tired, uninterested girl, she was transformed into a lively, energetic young woman. No alkalies were given during the course of treatment.

Many similar cases have been seen whose symptoms point to the *Bacillus coli* as the guilty organism. As one of the best methods of dealing with that organism is the administration of large doses of alkalies, it would be of interest to discover whether the colon bacillus were often present in those seborrhœics who are cured on taking alkalies. In the notes of my pre-war cases these words frequently occur: "Coated tongue, heavy morning sleep," and the best results were obtained by treatment directed to the colon. To-day I recognise that profound sleepiness in the early morning, in otherwise healthy young people, indicates in by far the majority a loaded pelvic colon; in almost all such cases the cæcum is palpable.

I am, Sir, yours faithfully,

AGNES SAVILL.

Devonshire-place, W., Feb. 28th, 1925.

DIAGNOSIS OF APPENDICITIS.

To the Editor of THE LANCET.

SIR,—The correspondence in THE LANCET on this subject brings up once again two—amongst other—important points: (1) the presence of diarrhœa or diarrhœa and vomiting, (2) the presence or absence of "normal temperature" and "normal pulse."

Diarrhœa or diarrhœa and vomiting may be the only symptoms complained of at the commencement of an attack, which eventually turns out to be one of appendicitis, so that careful examination should always be made to exclude the latter at the first visit. As an example of this the following case is typical:—

CASE 1.—On July 8th, 1912, I was called to see R. H., aged 9, who was supposed to be suffering from "summer diarrhœa" with slight vomiting. No pain of abdomen was complained of, but careful examination revealed deep tenderness over the appendix; the latter was removed two hours later and was found to be acutely inflamed.

CASE 2.—In this case, B. L., aged 19, had some slight "stomach-ache" in the afternoon and evening of Nov. 12th, 1913. This was followed by acute pain referred to the umbilicus from 5 A.M. to 7 A.M. on Nov. 13th. I saw the patient at 8.15 A.M., when the latter apologised to me for having me called to see him, protesting that he felt perfectly well. All pain had stopped: there was only very slight tenderness over the appendix. The temperature was 98·4° F. in the axilla; pulse 70. It was well known to me that the patient's ordinary temperature was 97·8° and that his pulse in the ordinary way was never more than 50. The sudden cessation of pain, the slight rise of temperature to the ordinary normal 98·4° and the rise in pulse from 50 to 70 made me confident that the diagnosis was one of perforated and most probably gangrenous appendix. At operation, two hours later, the appendix was found to be as large as an ordinary sausage, grangrenous throughout, and perforated in two places. The abdomen was closed without drainage. There was rather severe hiccough for 36 hours after the operation, showing that septic absorption had already taken place and that in all probability we had only just got the patient in time. Recovery, except for the hiccough, was uneventful.

In the above case the surgeon was not convinced of the urgency of the case until the rise in frequency of the pulse to 70 was emphasised. Without previous knowledge of the individual patient one may be sadly misled by a "normal temperature" and a "normal pulse."

I am, Sir, yours faithfully,

Streatham, S.W., Feb. 26th, 1925. HARRY E. SMITH.

To the Editor of THE LANCET.

SIR,—Mr. Rendle Short's presentation of the subject of appendicitis in your issues of Jan. 31st and Feb. 7th is as perfect as any I have ever read. I speak as one who for seven years has had to see the patient with appendicitis through his trouble from beginning to convalescence—operation included. But it seems to me that far too much importance is attached to pneumonia—Mr. Rendle Short did not specify lobar pneumonia, as Dr. Knyvett Gordon would seem to imply—in the differential diagnosis. I have attended personally during the last seven years well over 300 cases of pneumonia of all sorts—I am speaking from figures and not memory—and only in one case did the possibility of appendicitis suggest itself to me, and then not very convincingly. This was in a case of central influenzal pneumonia in a boy of 6. These cases present pain referred to the abdomen—a high temperature, and incessant vomiting for the first 24 hours is quite common and not, as Mr. Short states, rather uncommon. Added to this, the chest is silent for days and it may be only a day or two before the crisis that the signs of consolidation are evident, if indeed they become so at all. Moreover, the respiratory distress is not nearly as marked as in lobar pneumonia. This is the type of case where I can conceive difficulties—the ordinary lobar pneumonia with signs at the very onset should not be confused with anything else. It is interesting to note in this connexion that in a similar case of central pneumonia I once had a suspicion of enteric. It would be interesting if some practitioners of wide experience of pneumonia would write their experiences in this direction.

An interesting early sign of appendicitis which I have observed in three cases—first attacks—all within eight hours of onset, is the presence over the appendix region on palpation and auscultation of fine friction sounds, and I operated in two of the cases in the absence of rigidity and fever on the strength of this sign; I was rewarded in all three cases with a definitely reddened appendix and some few ounces of clear serous fluid in the peritoneum. These friction sounds—I think "peritoneal crepitus" would be an apt term for them—I have also noticed in a case of acute cholecystitis (over the gall-bladder) confirmed by operation, and I think they are due to the rubbing of the inflamed peritoneal surfaces on each other. I take it they would disappear when fluid is effused in larger quantity and in a case of any standing adhesions would prevent much peritoneal gliding taking place. They must be, therefore, a very early sign, but I do not pretend to know in what percentage of cases they take place. This may be an old sign—I discovered it quite accidentally and shall be glad to hear if anyone has described it in connexion with appendicitis.

Looking over my last 45 personal cases of acute appendicitis I find that the diagnosis was easy in the majority of cases at least well within 12 hours. One case that it took me 21 hours to diagnose as an abdominal emergency was a pelvic appendix—the

only one of the series. Here there was no fever, tenderness, or rigidity for that period, and when tenderness did appear it was to the left of the middle line. Dysuria and rectal tenderness aroused me (Cope's test was negative), and an incision through the right rectus later disclosed a pelvic abscess. One case, ill for two days before I saw her, passed about 5 oz. of blood per rectum. At operation this was found to be due to a deeply engorged cæcum which had a rotten gangrenous appendix behind it. A drainage-tube was inserted and recovery took place without fæcal fistula, which one rather expected.

I am, Sir, yours faithfully,

Aberdare, Feb. 23rd, 1925. AMBROSE W. OWEN.

"POST-ANÆSTHETIC" VOMITING.

To the Editor of THE LANCET.

SIR,—In view of Dr. Mortimer's article on post-anæsthetic vomiting in THE LANCET of Feb. 14th, perhaps a note of my experience may be of use to others.

Vomiting occurs most frequently with ether anæsthesia, and frequently, though not vomiting, the patient complains that he can taste the anæsthetic for days, or at least until he has had an aperient. My point is that it is the ether vapour which is swallowed rather than that which is inhaled which causes vomiting and retching. This is due to irritation of the gastric mucosa, and consequent secretion of thick mucus in which the ether dissolves, and which remains there until vomited or passed on to the small intestine. While house surgeon at various hospitals I frequently noticed that many patients, especially mouth-breathers, complained of a dry mouth while being anæsthetised, sometimes due perhaps to the injection of atropine they might have had. These patients were apt to moisten their lips and swallow frequently during administration of the anæsthetic, and I perceived gradually that as a rule those who swallowed most were those who vomited later on. I then made a practice of telling the patient to breathe through the nose if possible, and even though the mouth felt dry, on no account to swallow, as he would swallow anæsthetic vapour and increase the risk of being sick. I am pleased to be able to say that in those cases in which the patient refrained from allowing air (and vapour) the vomiting was negligible. In some cases in which the patient had had previous operations with much post-anæsthetic vomiting he remembered that the mouth had been dry and that in consequence he had swallowed frequently; when this was pointed out to him and he refrained from swallowing, there was no vomiting at any subsequent operation.

I am, Sir, yours faithfully,

Ramsgate, Feb. 28th, 1925. A. J. K. DREW.

TUBERCULIN DISPENSARIES.

To the Editor of THE LANCET.

SIR,—I am one of those doctors who watched and learnt Dr. Camac Wilkinson's method of treating tuberculosis with bi-weekly injections of tuberculin from 1910 onwards, and have myself followed out his teaching carefully with very many good results. From London dispensary work and in sanatoria at Rudgwick, Fritton, and Ockley, we got uniformly good results. And now in 1925 I have been told evidence exists of 50 per cent. of the tuberculin-treated patients being alive *ten years after cessation of treatment*, while as control, only 5 per cent. of the patients who were not so treated were alive, *all* being cases with T.B.

As recently as Feb. 27th a small but important meeting was held in Central London to suggest opening again tuberculin dispensaries. At least eight doctors were present, possibly more. At that meeting it was emphasised that any medical staff should be paid, as it is highly technical work requiring skill and care, and wants training and practice. But it is work which only requires a couple of hours twice a week regularly and it is of the greatest possible interest. Those of us who have worked at it for years do believe in it—it is only those who do not wait for results who reject it as no good.

In my opinion there are a large number of untouched cases of early tuberculosis who might be entirely saved from disaster by six months' treatment at very little expense and without the patient losing a day's work. Late cases are often improved materially, and in any case the expectoration is minimised and so they become converted into comparatively harmless cases. My object in writing is to say I will give all help I can to any doctor who is anxious to see and learn at 37, Jeffreys-road, Clapham-road, S.W. 4, every Tuesday and Friday from 9–10 A.M.

I am, Sir, yours faithfully,

ANNIE MCCALL,

Feb. 28th, 1925. Director, Clapham Maternity.

UNILATERAL PHRENIC NERVE PARALYSIS.

To the Editor of THE LANCET.

SIR,—The letter of Mr. Morriston Davies in your issue of Feb. 28th indicated that he has not found symptoms arising after evulsion of the phrenic nerve such as I described in your issue of the 21st, as accompanying pressure paralysis.

Mr. Morriston Davies is probably dealing with tubercle, and as such, his patients are likely to differ from the majority of mine in the following respects: (*a*) they are younger, or (*b*) they have had attacks of pleurisy.

As I stated in my paper, the symptoms are least marked in these two classes of individuals—namely, in the young, where thoracic movement is free, and in those in whom the diaphragm on the affected side is anchored by adhesions. This would seem to explain the differences in our experiences.

I am, Sir, yours faithfully,

CHARLTON BRISCOE.

Harley-street, W., March 3rd, 1925.

TINCTURE OF IODINE (PH. FR.).

To the Editor of THE LANCET.

SIR,—In your issue of Feb. 28th the editor of the *Prescriber* points out the difficulty of the absence of a suitable preparation of tr. iodi without potassium iodide. I would like to state that I have for some considerable period used a preparation of iodine with alcohol and glycerine for the intensive iodine treatment on a large number of patients and have had no untoward symptoms, such as iodism, &c., the amount of iodine tolerated being very surprising and the immense benefit derived in arthritic cases has been very assuring. I may add that the formula is to be found in the Extra Pharmacopœia (Martindale), vol. i., p. 1004, under the head of guttæ iodi (Farrer).

I am, Sir, yours faithfully,

CLAUDE ST. AUBYN-FARRER.

Harley-street, W., March 2nd, 1925.

METHYLATED SPIRIT AND ITS SUBSTITUTES.

To the Editor of THE LANCET.

SIR,—With reference to the annotation with this heading published on p. 398 of the issue of THE LANCET for Feb. 21st, we should be glad if you would give publicity to the fact that the Petrohol brand of isopropyl alcohol is imported solely by ourselves. To any of your readers who are interested, we shall be pleased to forward copies of the publications referred to in your article, and for your own informations we enclose copies of same.

We are, Sir, yours faithfully,

ANGLO-AMERICAN OIL COMPANY, LIMITED.

Albert-street, Camden Town, N.W. 1, Feb. 23rd, 1925.

Obituary.

GEORGE SIGERSON, M.D. R.U.I., HON. F.R.C.P. IREL.

Dr. George Sigerson, professor of biology in University College, Dublin, and Senator of the Irish Free State, died at his residence in Clare-street, Merrion-square, Dublin, on Feb. 17th, at a very advanced age. He had received his degree of doctor in medicine as long ago as 1859, and was probably the senior medical practitioner in Ireland. A native of Co. Tyrone, George Sigerson was educated at Cork, Dublin, and Paris, and throughout all his life kept up a close connexion with the medical school of Paris, which he visited almost every year. He was a member of several Parisian scientific societies and of the Scientific Society of Brussels. In his early days he was a pupil of Charcot, of Claude Bernard, and of Duchenne, and he translated Charcot's "Lectures on Diseases of the Nervous System" into English for the Sydenham Society. He also engaged in research work in biology, and his investigations attracted the attention of Darwin and Tyndall. On his return to Dublin Sigerson was, in 1865, appointed professor of botany in the Cecilia-street School of Medicine. Subsequently he became professor of biology in the school of University College and retained that professorship up to his death. He also engaged in private practice as a physician, chiefly concerning himself with nervous affections. He was for a time examiner in psychological medicine and diseases of the nervous system in the Royal University of Ireland.

It was, however, outside the field of medicine that Sigerson earned most distinction. He was an earnest student of the history and literature of Ireland, and translated many of the ancient Gaelic poems into English verse. It is only within the past few months that he published a work on which he had been engaged for years, "The Easter Song of Sedulius." He also wrote an authoritative work on Land Tenures and a book on Political Prisoners. He was a member of Earl Spencer's Commission on Prisons, and was responsible for many improvements in the treatment of prisoners which followed on the report of that Commission.

In 1918 the Royal College of Physicians of Ireland conferred its honorary Fellowship on Dr. Sigerson as a mark of respect for his scholarship. In 1922 he was nominated a member of the first Senate of the Irish Free State, and at the first meeting of the Senate, pending the election of officers, he presided. A man of wide learning in science and literature, with a keen appreciation of the arts, a brilliant conversationalist, Dr. Sigerson was loved for his personality as greatly as he was respected for his scholarship.

REGINALD ARTHUR MORRELL, M.R.C.S., L.R.C.P. LOND.

BY the death of Reginald Arthur Morrell, honorary radiologist to the Sheffield Royal Hospital, which occurred with tragic suddenness on Feb. 19th, the medical profession of Sheffield and district loses a valued member, and the subject of radiology a promising and enthusiastic worker. Dr. Morrell was at work when he suddenly collapsed and died within an hour from a pontine hæmorrhage; his death came as a great shock to his friends, who were quite unaware of any impairment in his health.

Morrell was born at Pangbourne, Berks, in 1883, and received his early education at Bradfield College. After spending three years at the electrical school of engineering, Kensington, he entered St. Thomas's Hospital Medical School and took the Conjoint Diploma in 1908. He originally intended to practise as an ophthalmic surgeon, and held several hospital appointments in that specialty, on which he contributed papers to *The Lancet* and the *British Medical Journal*, but he became impressed with the possibilities which radiology offered and determined to take up this branch of medicine. During the war he became attached to the Third South General Hospital as radiologist, with the rank of captain in the R.A.M.C., and later was medical officer in charge of the Physiotherapy Department of Headington Orthopædic Hospital under the Ministry of Pensions After an assistantship in the X ray department at the Radcliffe Infirmary, Oxford, he was appointed radiologist to the Sheffield Royal Hospital, where he soon proved himself not only a master of technique, but also an able organiser. During his brief tenure of the post the amount of work carried out by his department increased to a remarkable extent. He was a man of great energy, and in addition to a large and growing private clientèle he acted as radiologist to the Chesterfield Royal Hospital, to the City of Sheffield King Edward VII. Memorial Hospital, and as lecturer on radiology in the University of Sheffield. He found time, however, to contribute regularly to the medical press. In 1922 he published in our columns an introductory lecture delivered to the senior medical students of Sheffield University, on Radiology; its Use and Abuse. In it he emphasised the exacting nature of radiology in the service of medicine, pointing out that the radiologist must be a physicist of no mean order as well as an expert biophysicist and a medical man. During recent months he had become deeply interested in violet-ray work, and at the time of his death was engaged in making investigations in this subject.

A colleague writes of him: "He was a man of high ideals, deeply interested in the proper guidance and training of young men. His death leaves a gap amongst both students and staff which will be difficult to fill. Had he lived there is little doubt that he would have taken a high position as a radiologist. At a time when one hears much of the dangers to health which attend workers in this specialty it is assuring to know that Morrell's untimely end could in no way be attributed to that cause."

RICHARD WILLIAMS, M.R.C.S. ENG., L.R.C.P. EDIN., L.R.F.P.S. GLASG.,

CONSULTING SURGEON, LIVERPOOL EYE AND EAR INFIRMARY.

Richard Williams, who died at his residence, Pen-Bre, Bangor, recently, in his eighty-first year, obtained his first qualification in Glasgow more than 54 years ago, after which he studied ophthalmology in London and Paris, and held various local hospital appointments in that specialism. In 1873 he became ophthalmic surgeon to the Liverpool Royal Southern Hospital and later surgeon to the Eye and Ear Infirmary, while he also held the appointment of ophthalmic surgeon at the Albert Edward Infirmary, Wigan. He left Liverpool in 1910 after 37 years of steady ophthalmological work, but continued to practise as an ophthalmic surgeon at Bangor until a few months before his death. During the most active part of his career he was a Vice-President of the Ophthalmological Society of the United Kingdom and of the Liverpool Medical Institution, President of the Wigan Medical Society, and a Justice of the Peace for Liverpool.

A friend and colleague writes: "Richard Williams was a man of striking and unusual characteristics, the type of man who has many devoted friends but is sometimes misunderstood by mere acquaintances. He had an original and logical mind, was more of a thinker than a reader, and had a keen eye for essentials. He was a fine operator, high-strung, sensitive, but full of initiative and courage. His ingenuity is shown by the following examples: An eye speculum with eyelash guards; iridectomy scissors for use with the right hand on the left eye; a particularly handy cotton-wool holder; the treatment of conical cornea by the corneal cautery; a method of muscle advancement by a single circular stitch (this operation was usually done in seven or eight minutes under cocaine and was invariably successful); the vertical radial corneal incision in hypopyon ulcer, instead of the

better known Saemisch transverse section; the double iridectomy for incarceration of the iris in a corneal or limbal scar, performed by puncture and counter puncture with a Graefe knife; an excellent but little known operation for ectropion without excision of tissue. But to judge of his resource and inventiveness one had to see Williams at work. Every case was treated entirely on its own necessities and almost without reference to established custom, and this was especially true of plastic operations about the lids and conjunctiva—the greater the deformity the more Williams was pleased and the better seemed the result. Williams was extremely modest and could with great difficulty be induced to publish his methods, so that much of his original work was and is still known to a few colleagues only."

THE BATEMAN APPEAL.

As was explained in THE LANCET last week, it has been felt that material assistance ought to be offered to Dr. Bateman to meet the legal expenses of his recent successful appeal against conviction and to make good the deficiency in his professional income. Accordingly, the Bateman Fund has been opened and remittances should be forwarded to the Manager of THE LANCET, 423, Strand, W.C. 2, and made payable to the "Bateman Fund Account."

We have received :—

	£	s.	d.
The Proprietors of THE LANCET.. ..	250	0	0
Lieut.-Colonel Henry Smith, C.I.E., I.M.S.	5	0	0
Dr. J. Bright Banister	5	0	0
Dr. C. G. Martin	1	1	0
Dr. J. Norman Dugdale	0	10	0
Dr. C. O. Hawthorne	3	3	0
Dr. Herbert Spencer	5	0	0
Mr. R. H. Paramore	5	5	0
Dr. E. D. Telford	3	3	0
Mr. G. MacLellan Blair	1	1	0
Dr. Hester M. Henderson	2	2	0
Dr. Jas. Taylor	2	2	0
Mr. H. Cecil Broadhurst	1	1	0
Dr. Edward H. Squire	1	0	0
Dr. W. T. Rowe	2	2	0
Sir Charles Ballance	3	3	0
Anonymous	2	0	0
Dr. Howard Stratford	2	2	0
Dr. R. D. Attwood	1	1	0
Mr. G. Grey Turner..	5	5	0
Dr. Louis Macpherson	1	0	0
Dr. M. C. Moxham	1	1	0
Dr. R. W. Rix	0	10	6
Dr. C. Attenborough	1	1	0
Dr. J. Walker	0	10	0
Dr. Wm. W. Floyer..	2	2	0
Drs. Mitchell and Campbell	2	2	0
Dr. Bernard E. Potter	1	0	0
Dr. M. O. Raven	1	1	0
Dr. Thomas Laird	2	2	0
"A.M.O."	1	0	0

The Services.

ROYAL NAVAL VOLUNTEER RESERVE.

H. E. Hall to be Surg. Lt.

ROYAL ARMY MEDICAL CORPS.

Maj. M. D. Ahern is secd. for serv. under the Colonial Office.

Capt. D. W. M. MacKenzie is secd. for duty with Sudan Defence Force.

The undermentioned to be Lts. (on prob.): T. A. J. M. Dodd, R. A. Bennett, Lt. W. D. Speedy (Res. of Off., R.A.), J. N. Atkinson, W. A. D. Drummond, J. D. Corner, W. H. Carter, J. G. E. Vachell, and J. T. Smyth.

The undermentioned Lts. are confirmed in their rank: K. Fletcher-Barrett, C. W. Greenway, A. E. Campbell, and G. C. Phipps.

ARMY RESERVE OF OFFICERS.

Lt.-Col. A. R. O'Flaherty, having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

ROYAL AIR FORCE.

G. J. Griffiths is granted a short service commission as a Flying Officer, for three years on the active list.

Medical News.

UNIVERSITY OF LONDON.—A meeting of the Senate was held on Feb. 25th, Prof. E. A. Gardner, the Vice-Chancellor, being in the chair. Dr. J. H. Dible was appointed to the University chair of Pathology tenable at the London School of Medicine for Women. Dr. Dible had a distinguished career at the University of Glasgow, where he obtained the M.B., Ch.B. degrees with honours in 1912, gaining distinctions in zoology, materia medica and therapeutics, midwifery, and surgery. In 1913 he was appointed demonstrator in pathology in the University of Sheffield. In August, 1914, he joined the R.A.M.C., and in 1915 was appointed pathologist to No. 1 General Hospital, B.E.F., and after six months took command of No. 7 Mobile Laboratory until the end of the war. In 1919 he was appointed lecturer in pathology in the University of Manchester and assistant pathologist to the Manchester Royal Infirmary, and in 1921 lecturer in bacteriology and senior assistant in the department. He is the author of numerous publications in scientific medical journals.—The title of Emeritus Professor of Hygiene in the University was conferred on Prof. H. R. Kenwood, who held the Chadwick chair of Hygiene at University College from 1904 to 1924.—The title of Emeritus Professor of Medicine at University College was conferred on Sir John Rose Bradford, F.R.S., who occupied at that College the chair of Materia Medica, Pharmacology, and Therapeutics from 1895 to 1903, and the chair of Medicine and Clinical Medicine from 1899 to 1907.—The School of Pharmacy of the Pharmaceutical Society of Great Britain has been admitted as a school of the University in the Faculty of Medicine (in pharmacy only) for a period of five years as from Jan. 1st, 1925.

The following doctorates have been conferred :—D.Sc. in Biochemistry: Mr. Robert Robison; D.Sc. in Chemistry: Mr. G. R. Clemo; D.Sc. in Physics: Mr. Frederick Simeon.—The following were appointed Fellows of King's College: Prof. Edward Barclay-Smith, Prof. Owen Willans Richardson, F.R.S., and Sir John Charlton Briscoe.

University of London, University College.—The annual report of the College committee for the year ending Feb. 28th, 1925, has just been issued, and indicates a year of considerable activity. During the session 1923–24 the total number of students enrolled was 2835. From European countries there were 177 students: Switzerland 35, France 27, Holland and Russia each 22, Denmark and Germany each 9, Norway and Sweden each 6; 43 students came from the United States of America (17 undergraduate, 24 research, and 2 vacation course). From other countries, the largest—36—came from Japan; of these 8 were doing research work. The College has for many years taken an active part in promoting adult education by providing public lectures that are open without fee. Over 7000 persons attended these lectures during the session 1923–24, the approximate aggregate number of attendances being 12,180. The financial statement shows on the maintenance account a total expenditure of £176,994 and income of £168,943, leaving a deficit of £8051. This deficit is mainly accounted for in the very heavy expenses incurred in the maintenance of the new buildings and in the rating of these buildings. It is also partly accounted for in the slight decline in the number of students in the professional faculties in which fluctuation is bound to take place from time to time according to the financial position prevailing in the country. Steps are being taken to prevent a recurrence of the deficit, and hope is expressed that the University Grants Committee may be able to increase their grant in view of the large donations received by the College through the Rockefeller Trust and other bodies for the erection and equipment of the new buildings. During the year the Ramsay Memorial Laboratory of Chemical Engineering was opened by Prince Arthur of Connaught and is now in full working order. There is a satisfactory list of benefactions and donations, showing that the old students and friends of the College are still active in giving it support.

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.—The nineteenth meeting of the Commission was held at the Home Office, Whitehall, on Feb. 26th, with Sir Andrew Duncan, and later Lord Lawrence of Kingsgate in the chair. The Public Dental Service Association of Great Britain, Ltd., represented by Mr. T. Clifford Wing, L.D.S., Colonel H. C. Howkins, L.D.S., Mr. A. H. Condry, and Mr. P. I. Wigoder, L.D.S., gave evidence on the question of making dental treatment a universal benefit under the Health Insurance Act, and the scope, administration, and cost of such a benefit. Mr. Benjamin Broadbent, J.P., of Huddersfield, submitted proposals for revising and extending maternity benefit. Evidence was given on behalf of the

United Women's Insurance Society by the Lady Emmott, J.P., and Mr. Alban Gordon relating to the general work of the society and in particular to their scheme of dental benefit. Thereafter the National Amalgamated Approved Society, represented by Sir T. Neill, J.P., Mr. Farmer, and Mr. Pike, was heard on the constitution, operations, and finances of that society. The Commission announce that proof copies of the oral evidence and the relative statements submitted at the meeting of Feb. 12th are now on sale at H.M. Stationery Office. (2*s.* 3*d.*)

"POTATO WEEKS" AT NOTTINGHAM.—The third annual series of "potato, fruit, and vegetable weeks" in aid of Nottingham General Hospital have brought donations in kind to the value of £500, in addition to £190 in cash.

METROPOLITAN HOSPITAL. — The Lord Mayor Metropolitan Hospital Flag Day Appeal will be held on March 17th. It is hoped to raise a part of the £50,000 required to build the nurses' home and to extend the casualty department of the hospital at Kingsland-road, London, E.

SOCIETY FOR THE STUDY OF INEBRIETY.—The annual meeting of this society will be held in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, London, W., on Tuesday, April 21st, at 4 P.M., when Dr. Courtenay C. Weeks will open a discussion on Alcohol in Medical and Surgical Practice.

ST. MARYLEBONE HOSPITAL LEAGUE.—Since this league was formed 15 months ago to increase the contributions to hospitals from business houses, £7137 has been collected, as compared with a former average of £1500. The employees' section, which numbers 1900 members, is increasing at the rate of nearly 100 a week.

FRENCH POST-GRADUATE COURSE IN TUBERCULOSIS.—An Easter course of six lectures on Osteo-articular and Glandular Tuberculosis will be given by Dr. E. Sorrel, surgeon to the hospitals of Paris, at the Maritime Hospital at Berck (Pas-de-Calais) from April 6th to 11th. The lectures will be supplemented by demonstrations of methods of examination of patients, treatment, and laboratory technique. Full information may be obtained from Dr. Delahaye, at the Maritime Hospital.

ROYAL INSTITUTION.—On Tuesday, March 10th, at 5.15 P.M., Prof. E. N. da C. Andrade will begin a course of two lectures at the Royal Institution on the Evolution of the Scientific Instrument, and on Thursday, March 12th, Dr. Leonard Hill will deliver the first of two lectures on the Biological Action of Light. The Friday evening discourse on March 13th will be delivered by Prof. Gilbert Murray on the Beginnings of the Science of Language, and on March 20th by Prof. J. W. McBain on Soaps and the Theory of Colloids.

BELGRAVE HOSPITAL FOR SICK CHILDREN.—An offer has been made of £10,000 towards the £30,000 required for the completion of the hospital, the provision of a new X ray department, and accommodation for the nursing staff, on condition that a simular amount is raised in 10 donations of £1000 or 20 of £500 each. At present the nurses live, some in the hospital, and others in two outside houses, one of which is some distance away.

AMERICAN HEART ASSOCIATION.—The first annual meeting of this association was held at the Academy of Medicine, New York, U.S.A., on Feb. 2nd. Dr. Lewis A. Conner, the President, reviewed briefly the progress of the development of the association and commented on the need for such an organisation and the widespread interest which its formation had developed. Dr. Haven Emerson, chairman of the Committee on Membership, described the methods employed to reach all parts of the United States and Canada; regional agents covering one or more States have been appointed, and already 37 States are represented in the membership of the association. It was decided to employ one or more workers with a knowledge of the most recent and approved methods for the prevention of heart disease, and for the organised care of cardiac patients; these workers will be sent to different sections of the country to encourage the establishment of new centres, demonstrate the methods found to be effective, and aid in solving local problems as they arise. At a meeting of the board of directors immediately following the annual meeting, the following officers were elected: Dr. Lewis A. Conner, President; Dr. James B. Herrick, Vice-President; Dr. Robert H. Halsey, Secretary; Dr. Paul D. White, Treasurer; Miss M. L. Woughter, Acting Executive Secretary. The central offices of the society are at 370, Seventh-avenue, New York.

A HOSPITAL FOR WEMBLEY.—A hospital is to be erected at Wembley at a cost of £12,500, nearly half of which has already been raised. A site has also been given.

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.—A meeting will be held at the Elizabeth Garrett Anderson Hospital on March 10th at 8.15 P.M., when Dr. Dorothy Hare will read a paper on the Value of the Electrocardiograph to the Physician and Surgeon.

SOCIETY FOR CONSTRUCTIVE BIRTH CONTROL AND RACIAL PROGRESS.—A special meeting of this society will be held on March 15th, at 3 o'clock, at the Criterion Theatre, Piccadilly-circus, London, W., to discuss Why Doctors Disagree About Birth Control. The chair will be taken by Sir John Cockburn, M.D., and the meeting will be addressed by Dr. H. Maxwell Telling, Dr. Jane L. Hawthorne, Mrs. Marie Stopes, D.Sc., Ph.D., and others.

HOSPITAL ACCOMMODATION IN NORTH-WEST MIDDLESEX.—The Ministry of Healtb has sanctioned the raising by the Hendon Board of Guardians of a loan of £134,000 for the erection of a hospital to take the place of the infirmary which was built about 80 years ago.—Pinner and Northwood have decided to join forces for the provision of a permanent cottage hospital in the latter parish. The present hospital is housed in a temporary building.

BRITISH ORTHOPÆDIC ASSOCIATION.—The first award of the Sir Robert Jones Medal and British Orthopædic Association Prize of £50 has been made to Mr. G. Perkins, F.R.C.S., assistant surgeon at the Royal National Orthopædic Hospital, for his essay on the Diagnosis, Treatment, and End-results of Tuberculous Disease of the Hip-joint. The subject of the essay for 1925 is the Classification and Differential Diagnosis of the Different Forms of Arthritis. Particulars may be obtained from the hon. secretary of the Association, 1A, Portland-place, London, W. 1.

ECCLES HOTEL ESTABLISHMENT, BANTRY BAY.—On March 1st–2nd a large medical party visited the Eccles Hotel Establishment, Glengariff. Situated on Bantry Bay in the extreme west of Ireland, it has a long reputation as a climatic station, and recently peat- and sun- and light-baths have been employed in the establishment with success. It is proposed to develop these and other methods of physical treatment on the expressed medical opinion that the climate, together with suitable medical facilities, will be of benefit in convalescence from illness or operation, in many neurasthenic cases, and in certain forms of rheumatism. Glengariff occupies a very sheltered position at the head of the bay, intersected by headlands, and containing many rocky islands where semi-tropical vegetation flourishes. Fuchsia hedges, eucalyptus, hydrangea, and myrtle attest the mildness of the climate. The party from London were met by Sir William Thompson, President of the Royal College of Physicians of Ireland, and various well-known Irish physicians.

VENEREAL DISEASE: *Deputation to the Minister of Health.*—On March 3rd the Minister of Health, supported by the chief medical advisor, the secretary of the department, and other technical advisors, received a joint deputation from the National Council for Combating Venereal Diseases and the Society for the Prevention of Venereal Disease. In the absence of Lord Trevethin, President of the National Council for Combating Venereal Diseases, the joint deputation was introduced by Sir Auckland Geddes, President of the Society for the Prevention of Venereal Disease, acting on behalf of both societies. Sir Auckland Geddes stated the case on the lines agreed by the joint conference of the two societies, and supported the recommendation contained in Clause 14 of the Trevethin report: "That the law should be altered so as to permit properly qualified chemists to sell ad hoc disinfectants, provided such disinfectants are sold in a form approved and with instructions for use approved by some competent authority." Sir Auckland Geddes further urged on behalf of the deputation that this competent authority preferably should be the Ministry of Health, otherwise the Medical Research Council or a commission of experts. In reply, Mr. Neville Chamberlain thanked the deputation for attending and promised to consider carefully the suggestions which had been made. He would communicate the result of his further consideration of these suggestions to the two societies as soon as possible. The members of the joint deputation were as follows:—National Council for Combating Venereal Diseases: Mr. L. Bowden, Mr. D. Bramah, Mrs. Ogilvie Gordon, Prof. Kenwood, Dr. D. Lees, Mrs. Neville-Rolfe, and Mr. E. B. Turner. Society for the Prevention of Venereal Disease: Sir Auckland Geddes, Dr. Jane Lorimer Hawthorne, Dr. R. A. Lyster, Dr. Mearns Fraser, Mr. Basil Peto, M.P., Mr. Frank Souter, and Mr. Wansey Bayly.

Parliamentary Intelligence.

HOUSE OF COMMONS.

MONDAY, FEB. 23RD.

The Production of Certified Milk.

Mr. HURD asked the Minister of Agriculture what was the number of producers of certified milk as compared with a year ago, and whether, in the interests of public health, he would recommend that the licence fee for such producers be made purely formal so as to encourage farmers to produce this milk.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: The number of producers of certified milk at the present time is 74. I cannot give the number for this date last year, but the numbers at Dec. 31st, 1923, and Dec. 31st, 1924, were 55 and 71 respectively. The licence fees have been settled on a basis estimated to cover the special expenses of the Ministry of Health in respect of inspection and bacteriological examinations, and my right hon. friend does not think that he can recommend any reduction.

WEDNESDAY, FEB. 25TH.

Nursing Homes Registration.

Mr. G. B. HURST, in asking leave to introduce under the Ten-Minute Rule a Bill "to provide for the registration and inspection of nursing homes," said it was a measure which could not be regarded as being of a controversial character, and among its backers were members of all parties in the House. At present the term "nursing home" had no meaning whatever. Any person, however unqualified, could call his or her institution, however ill-run or managed, a nursing home, however unskilled or untrained the nurses might be and however extortionate the charges. The prevalence of these bogus institutions dragged down the prestige of great and deserving institutions, and the expense of such institutions was a drain on public resources. The intention was to provide for the registration and inspection of nursing homes, so that no institution could be carried on as a nursing home which was not worthy of the title. Under the Bill no institution would be entitled to be called a nursing home if it was carried on by unqualified or unsuitable persons or if the nursing or domestic staff was ill-accommodated and the ventilation bad, or the lighting or warming inadequate. Those having charge of the management would have to be State-registered nurses after Jan. 1st, 1930. Nothing in the Bill was intended to preclude anyone having no connexion with the nursing profession from being registered, but the matron or person in charge must be a fully qualified person. Persons refused registration could appeal to the Minister of Health and he could appoint a referee to deal with the complaint. The question of proprietorship was unaffected, and so far as the details were concerned the promoters were most anxious to meet everybody interested, so that the measure might be definitely regarded as uncontroversial. Although the Bill had been drafted by the College of Nursing, it was not intended to help any section, but to help all nurses. He hoped that the Ministry of Health would do what it could for the Bill.

The motion for leave to introduce the Bill was agreed to and the measure was brought in and read a first time.

Diabetes Treatment in Scotland.

On the motion for the second reading of the Public Health (Scotland) Amendment Bill,

Sir J. GILMOUR (Secretary for Scotland) explained that it was exactly the same measure as that which the House discussed last year, and which, after passing through the House of Commons, was given a second reading in the House of Lords. It empowered the public health authorities in Scotland to provide insulin to persons suffering from diabetes who required assistance in obtaining the treatment. It was a matter of some urgency, because since the early part of 1924 certain local authorities had been, in fact, providing insulin, and this Bill was for the purpose of regularising the position. The Bill was confined to diabetes.

Mr. J. STEWART (who was Under Secretary of Health for Scotland in the Labour Government) said that he thought it was very creditable to the Government that they were anxious to give effect to the promise made last year. Everyone who knew what the treatment of diabetes by insulin meant would realise that this was a scheme which ought to be hastened. But there were many diseases of a somewhat simular nature about the cure of which nothing was known at present. The Labour Party thought that provision should be made for the treatment of other diseases if occasion arose without the need for passing a separate Bill. Under the Bill of last year it was provided that the measure could be applied to other diseases besides diabetes by an Order in Council laid on the Table and passed by both Houses of Parliament, and he urged that provision should be re-inserted in the present Bill.

Several other Labour Members having supported Mr. Stewart,

Sir J. GILMOUR said that he could give no assurance that if the Chairman of the Scottish Grand Committee would allow an amendment to be moved restoring the former provision that the Government would be willing to accept it.

Labour Members continued to protest, and Sir J. Gilmour remarked that if the Opposition preferred to lose the Bill it was for them to decide.

Mr. Buchanan was still speaking when at 8.15 P.M., under the rules of the Houses, the debate was adjourned in order to allow a private Bill to be discussed.

Inoculation of Naval Ratings.

Mr. ROBERT YOUNG asked the First Lord of the Admiralty how many naval ratings were inoculated against enteric fever during the past six months; how many refused to be inoculated; whether any naval ratings were refused leave for declining to be inoculated; and, if so, what ranks they belonged to and the dates of refusal of leave.—Mr. J. C. DAVIDSON (Parliamentary Secretary to the Admiralty) replied: The statistics asked for would entail reference to all H.M. ships and establishments in different parts of the world and involve much time and labour. The regulations on the subject are given in Sections 10 and 11 of Article 1316 of the King's Regulations and Admiralty Instructions which reads as follows:—

10. No punishment or penalty is to be incurred for declining vaccination or revaccination on conscientious or other grounds, but every precaution is to be taken to prevent objectors becom ng a danger to the Service. They are not to land in ports where there may be any danger of contracting small-pox, and while the ship is lying at such ports they are to be inspected daily by the medical officer. The fact that a man has refused vaccination or revaccination is to be noted on his Service certificate, and in no circumstances is he to be allowed to re-engage or to be enrolled in the Royal Fleet Reserve (see Article 830, Clause 9).

11. When circumstances arise which render it advisable to inoculate officers and men against enteric fever, cholera, or any other infectious diseases, voluntary inoculation can only be performed. The provisions of Clause 10 are to apply to persons objecting to such inoculation on conscientious or other grounds.

Cost of Maintenance in Asylums and Sanatoriums.

Mr. HANNON asked the Minister of Health the average annual cost, including administration per individual, of maintaining patients in sanatoriums, county and borough asylums, and institutions belonging to Poor-law authorities.—Mr. NEVILLE CHAMBERLAIN replied: The average gross cost per inmate for the year 1923–24 is as follows: Sanatoriums, £136; county and borough lunatic asylums, £75 10*s.*; and Poor-law institutions, £65 10*s.* It will be understood that the figure given for Poor-law institutions covers all persons in receipt of institutional relief and not merely sick persons.

THURSDAY, FEB. 26TH.

Mortality Among Ex-Service Men.

Mr. GROVES asked the Minister of Pensions whether he had statistics to show whether the disabilities from which ex-Service men suffered had progressively decreased or increased; and the degree of mortality among those ex-Service men who received pensions in 1920, 1921, 1922, 1923, and 1924.—Major TRYON replied: The statistics of my department taken over a term of years show that in the great majority of cases the ailments or injuries occasioned by war service have either reached a stable condition or have materially improved, though necessarily a proportion of the cases have deteriorated. The mortality among men on the pension list in each of the six years from 1919 to 1924 has been 13·5, 11·6, 12, 14, 12 and 13·5 per 1000 respectively.

Medical Referees.

Mr. THOMAS WILLIAMS asked the Home Secretary if he was aware that in certain cases the medical referee under the Workmen's Compensation Act had been known to be almost a permanent representative of employers in compensation disputes; and would he take steps so that in future all medical referees should be independent of either employers or employees.—Mr. LOCKER-LAMPSON replied: I know of no such cases among the medical referees at present appointed under the Act. It is a condition of the appointment of a medical referee that he shall hold no permanent employment either on the employers' or on the workers' side, and the medical referees are enjoined that in their private practice they should as far as possible avoid cases which are likely to come before them in their official capacity. It has not been found practicable to impose any further restrictions on them.

Unhealthy School-buildings.

Mr. ROBERT YOUNG asked the President of the Board of Education whether he could say when the last survey of

school-buildings was taken; how many education authorities had been notified of the unfit and unhygienic condition of their schools; and what was the number of such schools throughout the country.—The DUCHESS OF ATHOLL (Parliamentary Secretary to the Board of Education) replied: A survey was made last year of the worst public elementary school premises in the areas of the London County Council, the county boroughs, and the boroughs and urban districts in England, which are local education authorities for elementary education. As a result, letters have been addressed to 165 authorities (out of 239), and the number of schools or departments mentioned is 807 (out of 5760). This figure includes not only schools which in the opinion of the Board are altogether unsuitable, but also schools which are structurally unsuitable in part or for their present numbers in varying degrees. A similar survey is in progress in the areas of the county councils in England (apart from London) and it is hoped that the results of the survey of the areas of all local authorities in Wales will shortly be available.

Government Medical Staff.

Lieut.-Colonel HORLICK asked the Minister of Health what was the total cost of the medical staff of the Local Government Board in 1914 and 1918, and of the increased medical staff of the Ministry of Health in 1919, 1923, and for the current year; and how many new medical officers had been appointed in the last 12 months.—Mr. NEVILLE CHAMBERLAIN replied: The total cost of the medical staff of the Local Government Board for salaries and travelling and subsistence expenses was £30,420 in 1914–15, and in 1918–19, including bonus, £35,743. The medical staff of the Ministry of Health cost £55,985 in 1919–20, £121,454 in 1923–24; the estimated cost for the current financial year is £122,910. My hon. friend is no doubt aware that the functions of the Ministry of Health include not only those of the Local Government Board, but also of the National Health Insurance Commissions for England and Wales. The figures for 1923–24 and the current financial year include the salaries and expenses of the regional medical officers; approximately four-fifths of the total cost of this service is recovered out of National Health Insurance funds. Three new medical officers have been appointed in the last 12 months to fill vacancies in existing posts.

Antenatal Clinics.

Mr. WINDSOR asked the Minister of Health whether he proposed, in view of the present rate of maternal mortality, to call the attention of local authorities to the importance of establishing effective antenatal clinics and of making adequate provision for the care of women about to become mothers.—Mr. NEVILLE CHAMBERLAIN replied: A circular was issued by my department on June 30th calling the attention of local authorities to the importance of these and other measures for reducing the maternal mortality-rate.

Infant Mortality in Bombay.

Mr. JOHNSTON asked the Under-Secretary of State for India whether he was in a position to give the official figures on the infant mortality in Bombay during the year 1921.—Earl WINTERTON replied: According to the reports of the health officer of the Bombay Municipality the infant mortality in Bombay City was 667 per 1000 births in 1921, 403 per 1000 in 1922, 411 per 1000 in 1923, and 419 per 1000 in 1924. Examining in 1922 the vital statistics from the beginning of the century the health officer remarked that the fluctuations in infant mortality, which corresponded in time and direction with those of the general death-rate, were indirectly or directly due to plague in the first decade of the century and to influenza in 1918–21.

FRIDAY, FEB. 27TH.

Unqualified Dental Dressers.

Lieut.-Colonel MASON asked the Minister of Health how long the unqualified dental dressers, employed under the Ministry of Education in Derbyshire and Shropshire, would be permitted to continue in practice.—Mr. NEVILLE CHAMBERLAIN replied: The conditions under which deatal dressers may be employed in the school dental service have been formulated in a circular issued by the Board of Education after consultation between the Dental Board and the Ministry of Health. In order to allow time for the arrangements in Derbyshire and Shropshire to be reorganised in conformity with the new conditions, permission was granted to the local education authorities of these counties to continue the employment of their existing dental dressers without modification up to the end of the present year.

MONDAY, MARCH 2ND.

Pensions Medical Officers and Overseas War Service.

Colonel Sir ARTHUR HOLBROOK asked the Minister of Pensions what were the special qualifications, medical or otherwise, of each of the undernamed officers without overseas service, which rendered their retention in the service of the Ministry, in the interests of the pensioner, more desirable than that of the officers with overseas service and in some cases with a war disability whose full-time services were about to be terminated: Dr. A. C. Pickett, Bristol (no overseas service), Dr. A. Williams, Brighton (no service during the war), Dr. J. D. Allen, Bath, and Dr. T. Sheedy, Ministry headquarters, London; whether he was aware that one of their number only obtained his medical qualifications in the year 1916 and had had practically no experience in the medical practice of his profession since that date, having been employed by the Ministry of Pensions, since he joined the Ministry, on purely administrative duties of a subordinate nature during the past five years; and whether he had been told that he was to succeed an officer with overseas service and a war disability whose services were to be dispensed with, part of whose duties consisted in visiting pensioners at their homes and the holding of medical clinics.—Major G. C. TRYON replied: The considerations governing the selection of medical officers of the Ministry of Pensions for further employment were fully explained in a reply which I gave the hon. and gallant Member on Feb. 12th, and it is due solely to those considerations that the officers mentioned in the question are being retained.

Boy Prisoner's Mental Condition.

Mr. SCURR asked the Home Secretary whether his attention had been called to the sentence imposed on Robert Oulagi, a boy of 18, at the Old Bailey on Feb. 26th; and if he would cause an inquiry to be held into the mental and physical condition of the prisoner before the punishment of 20 strokes with the cat was carried out.—Mr. LOCKER-LAMPSON (Under Secretary for the Home Department) replied: I have received reports showing that there is no medical reason why the sentence of the court on this prisoner should not be carried out. It will not, of course, be carried out until the expiration of the ten days within which the prisoner may apply to the Court of Criminal Appeal.

Mr. SCURR asked if there was not considerable evidence that the prisoner was absolutely abnormal.—Mr. LOCKER-LAMPSON said that the senior medical officer of Brixton Prison had reported very fully on this case and he stated that the prisoner was sane and in robust physical health and condition. His general bodily and mental development was far in advance of his actual age and there was no evidence of epilepsy. The doctor could not come to any other conclusion than that he was responsible for his actions.

High Death-rate at Singapore.

Mr. CECIL WILSON asked the Secretary of State for the Colonies whether he was aware that, in the course of an inquiry in 1905 into the high death-rate in Singapore, it was pointed out that one-fifth of the population was permanently on the sick-list and that much of the death and sickness was preventable; and what had been done since that time to improve housing and sanitary conditions and what amount of money had been spent on such improvements.—Mr. ORMSBY-GORE (Under Secretary for the Colonies) replied: I am calling on the Governor to supply a comprehensive report on the points raised in this question and will communicate further with the hon. Member as soon as it is received.

Lee Commission and Indian Medical Services.

Lieut.-Colonel FREMANTLE asked the Under Secretary of State for India when the Government would state their proposals for dealing with the recommendations of the Lee Commission with regard to the medical services in India; and whether the House would be given an opportunity of discussing them before any decision was arrived at.—Earl WINTERTON replied: My noble friend has not yet received the Government of India's recommendations, though he expects them very shortly. He would prefer to await them before giving any undertaking in reply to the last part of the question.

TUESDAY, MARCH 3RD.

Maintenance of Lunatics.

Mr. GROVES asked the Minister of Health whether, in view of the increase in the cost of maintenance of inmates of lunatic asylums now chargeable to boards of guardians and the inadequacy of the sum of 4s. per head repaid to the various unions under the Local Government Act, 1888, he would consider the introduction of legislation amending the Act in order to provide a repayment to boards of guardians of 50 per cent. of the cost incurred for the maintenance of such patients.—Sir KINGSLEY WOOD replied: My right hon. friend cannot undertake to introduce legislation on this subject at the present time. The grant in question was intended to make up the difference between the cost of maintenance in asylums and in Poor-law institutions, and the latest figures show that the average cost in asylums is only £10 a year more than the average cost in Poor-law institutions.

Medical Diary.

SOCIETIES.

THE ROYAL SOCIETY, Burlington House, Piccadilly, W.
THURSDAY, March 12th.—4.30 P.M.—*Papers to be read:* Sir Charles Sherrington: Remarks on Some Aspects of Reflex Inhibition. E. G. T. Liddell and Sir Charles Sherrington: Recruitment and Some Other Features of Reflex Inhibition. D. T. Harris: Studies on the Biological Action of Light. (Communicated by Prof. A. V. Hill.) H. Hartridge and F. J. W. Roughton: The Kinetics of Hæmoglobin. III. (Communicated by Prof. J. N. Langley.)—*Paper to be read in title only:* S. B. Schryver, H. W. Buston, and D. H. Mukherjee: The Isolation of a Product of Hydrolysis of the Proteins Hitherto Undescribed. (Communicated by Prof. V. H. Blackman.)

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MEETINGS OF SECTIONS.

Monday, March 9th.

WAR: at 5 P.M.
Award of the North Persian Forces Memorial Medal for 1923 to Wing-Commander Harold E. Whittingham, R.A.F.M.S.
The Medal will be presented by Sir StClair Thomson, President of the Society.
Paper:
Wing-Commander H. E. Whittingham, R.A.F.M.S.: The Treatment of Malaria by Novarsenobillon.

Tuesday, March 10th.

THERAPEUTICS AND PHARMACOLOGY: at 4.30 P.M.
Communications:
Dr. J. Trevan, Mr. W. H. Gray, and Miss E. Boock: The Physiological Properties of Some Derivatives of Cocaine.
Dr. W. J. Smith Jerome: The Unknown Factors of Gout.
Miss Steabben: Observations on the Action of Colloidal Substances on Blood Elements and Antibody Content.

PSYCHIATRY: at 8.30 P.M.
Paper:
Dr. T. W. Mitchell: The Psycho-analytic Theory of Suggestion and Hypnosis.

Thursday, March 12th.

COMPARATIVE MEDICINE, TROPICAL DISEASES, OBSTETRICS AND GYNÆCOLOGY { *Special Discussion:* at 5.30 P.M. Infective Abortion in Cattle and its Relation to Mediterranean Fever.

Opener:
Prof. John Eyre.
Other Speakers:
Mr. L. E. W. Bevan, Sir Percy Bassett-Smith, Colonel J. C. Kennedy, Prof. Louise McIlroy, Mr. J. T. Duncan, Mr. Leslie Pugh, and others.

NEUROLOGY:
Clinical Meeting at the National Hospital for the Paralysed and Epileptic, Queen-square, W.C., at 8 P.M.
Notes of Cases (concise and in a form suitable for publication) must reach one of the Hon. Secretaries of the Section not later than first post on Monday morning, March 9th.

Friday, March 13th.

CLINICAL: at 5.30 P.M. (Cases at 5 P.M.)
Cases:
Sir Percy Bassett-Smith: Case of Raynaud's Disease.
Dr. Bernard Myers: (1) Case of Chorea.
(2) Case of Chorea in a Girl of Twelve.
Dr. Parsons-Smith: Two Cases of Cardiac Disease.
Mr. James Driberg: Case of (?) Tubercular Disease of Rib.
Dr. L. S. T. Burrell: Case of Bronchiectasis.
Other cases will be shown.

OPHTHALMOLOGY.
Clinical Meeting at Guy's Hospital, S.E. 1, at 5 P.M.
Cases:
Mr. Ormond: (1) Case of Arachno-dactylia.
(2) Case of Glioma of Retina Treated by Deep X Ray Therapy.
(3) Case with "Hole in the Macula."
Mr. O. G. Morgan: (1) Congenital Lagophthalmos.
(2) Recurrent Third Nerve Paralysis in a Child.
Other cases will be shown.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, March 9th.—8.30 P.M., Discussion on the Fundus Oculi in General Medicine, to be introduced by Mr. Ernest Clarke, followed by Mr. R. Foster Moore, Dr. James Collier, and others.

BIOCHEMICAL SOCIETY.
MONDAY, March 9th.—5 P.M. (at the Lister Institute, S.W.) *Communications:* F. W. Fox: The Cholesterol Content of Bile and its Bearing upon the Metabolism of Cholesterol and the Bile Acids. J. R. Marrack: The Total Base Content of Plasma. D. Hoffert and I. S. Maclean: The Action of Yeast on Lactic Acid. E. H. Lepper and C. J. Martin: (*a*) The Influence of Salt Concentrations on the C_H of Buffer Solutions as Indicated by the Electrometric and Colorimetric Methods Respectively; (*b*) Can the C_H of mixtures of $NaHCO_3$ and CO_2 in High Dilutions be Determined by the Hydrogen Electrode?

WEST KENT MEDICO-CHIRURGICAL SOCIETY, Miller General Hospital, Greenwich, S.E.
FRIDAY, March 13th.—8.45 P.M., Mr. Hugh Davies: Some Interesting Abdominal Cases.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, March 9th, to SATURDAY, March 14th.—BARNES HALL, Royal Society of Medicine. A Discussion on Post-Graduate Teaching in London will take place on Wednesday, March 18th, at 6 P.M., Sir Arbuthnot Lane, Bt. (President of the Fellowship), will preside. All members of medical profession invited to attend, from whom criticisms of the existing arrangements and suggestions for improvement are desired.—WEST LECTURE HALL, Royal Society of Medicine. Lecture arranged by the Fellowship of Medicine and open to all members of the medical profession. Wednesday, March 11th, at 5.30 P.M., Mr. Oswald Addison on Cleft Palate.—CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd-street, W.C. Lecture-demonstrations in Diseases of the Eye. Daily in the afternoons.—ROYAL WATERLOO HOSPITAL, Waterloo-road, S.E. Special Course in Medicine, Surgery, and Gynæcology. Lecture-demonstrations will be given in the Wards and Out-patient Departments. — NORTH-EASTERN FEVER HOSPITAL, St. Ann's-road, N., Wednesday and Saturday at 11 A.M., Demonstrations on the Diagnosis and Treatment of the Acute Infectious Diseases will be given by Dr. Frederic Thomson.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, March 9th.—12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Mr. Addison: Surgical Wards. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.
TUESDAY.—11 A.M., Dr. McDougal: Electrical Dept. 12 noon, Dr. Burrell: Chest Cases. 2.30 P.M., Mr. Tyrrell Gray: Surgical Wards.
WEDNESDAY.—11 A.M., Medical Registrar: Medical Wards. 2 P.M., Dr. Burnford: Medical Wards. 4.30 P.M., Dr. Trevor Davies: Gynæcological Demonstration.
THURSDAY.—11 A.M., Sir Henry Simson: Gynæcological Wards. 2 P.M., Mr. Bishop Harman: Eye Dept. 2 P.M., Mr. MacDonald: Genito-Urinary Dept.
FRIDAY.—10.30 A.M., Dr. Dowling: Skin Dept. 2 P.M., Mr. Sinclair: Surgical Out-patients. 2 P.M., Mr. Vlasto: Throat, Nose and Ear Dept.
SATURDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose and Ear.
Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.
POST-GRADUATE COURSE: FEB.–MARCH, 1925.
CLINICAL LECTURES AND DEMONSTRATIONS.
MONDAY, March 9th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Syphilis of the Nervous System (1): Dr. Adie.
TUESDAY, March 10th.—2 P.M., Out-patient Clinic: Dr. Adie. 3.30 P.M., The Myopathies: Dr. Birley.
THURSDAY, March 12th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Recovery of Function after Nerve Anastomosis: Dr. Bailey.
FRIDAY, March 13th.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Surgery of the Sympathetic System: Mr. Percy Sargent.
COURSE OF LECTURES AND DEMONSTRATIONS ON THE PATHOLOGY OF THE NERVOUS SYSTEM.
THURSDAY, March 12th.—12 noon, The Neuron: Dr. J. G. Greenfield.
COURSE OF LECTURES AND DEMONSTRATIONS ON THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM.
MONDAY, March 9th.—12 noon, Cranial Nerves: Dr. Hinds Howell.
The Fee for this Course will be £2 2*s*.
Dr. H. J. MacBride will give a COURSE OF EIGHT CLINICAL DEMONSTRATIONS, chiefly on METHODS OF EXAMINATION OF THE NERVOUS SYSTEM, in the Wards at 10 A.M. on Tuesdays and Fridays, if sufficient entries are received. The Fee for this Course will be £2 2*s*.
COURSE OF LECTURES AND DEMONSTRATIONS ON THE NEUROLOGY OF THE EYES.
WEDNESDAY, March 11th.—3.30 P.M., The Oculomotor Nerves: Mr. Leslie Paton.
Applications for this Course should be made early. Fee £5 5*s*. if taken as a separate Course, or £3 3*s*. if taken with the General Course.
Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M., or at such other times as may be announced.
Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course. Fees should be paid to the Secretary of the Hospital at the Office on entering for the Course.
J. G. GREENFIELD, Dean of Medical School.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
TUESDAY, March 10th.—4.30 P.M., Mr. E. S. Pierrepont: The Mouth as an Aid to Diagnosis.
FRIDAY.—4.30 P.M., Mr. E. Gillespie: Enlargements of the Prostate.
Daily: In-patient and Out-patient Clinics in General and Special Departments, Operations, &c.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, W.
SATURDAY, March 7th and 14th.—3 P.M., Sir Ernest Rutherford: The Counting of the Atoms.
TUESDAY, March 10th.—5.15 P.M., Prof. E. N. da C. Andrade: Evolution of the Scientific Instrument.
THURSDAY.—5.15 P.M., Dr. Leonard Hill: Biological Action of Light.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, March 12th.—4 P.M., Mr. Pitts: Affections of the Gums in Children.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL POST-GRADUATE LECTURES, Marylebone-road, N.W.
THURSDAY, March 12th.—5 P.M., Mr. C. S. Lane Roberts: Venereal Diseases in Pregnancy.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, March 13th.—4 P.M., Mr. Walwyn Thomas; Acute Mastoiditis.

ST. JOHN'S HOSPITAL, 49, Leicester-square, W.C.
TUESDAY, March 10th.—5 P.M., Dr. H. G. Adamson: Rodent Ulcer.
THURSDAY.—5 P.M., Dr. H. MacCormac: Malignant Growths.

MANCHESTER ROYAL INFIRMARY.
TUESDAY, March 10th.—4.15 P.M., Mr. H H. Rayner: Cancer of the Breast—A Review of the Results of Treatment.
FRIDAY.—4.15 P.M., Dr. E. M. Brockbank and Mr. E. D. Telford: Clinical Cases.

ANCOATS HOSPITAL.
THURSDAY, March 12th.—4.30 P.M., Dr. Norman Kletz: Dyspepsia.

CHADWICK PUBLIC LECTURES.
MONDAY, March 9th.—8 P.M. (at the Inner Temple Hall, London), The Lord Newton: The Necessity for Legislation with Regard to Smoke Abatement.

ST. ANDREWS INSTITUTE FOR CLINICAL RESEARCH.
TUESDAY, March 10th.—4 P.M., Dr. Anderson and Dr. MacLennan: Albuminuria and the Specific Fevers. Discussion.

THE PEOPLE'S LEAGUE OF HEALTH.
Lectures on What We Should Eat and Why, at the Medical Society of London, 11, Chandos-street, W.
WEDNESDAY, March 11th.—6 P.M., Dr. H. Scurfield: Principles of Infant Feeding.

Appointments.

GRIFFIN, A. J. B., M.B., Ch.B. Liverp., D.P.H., has been appointed Assistant Medical Officer of Health, Walsall.
HOLDEN, O. M., M.D., Ch.B. Birm., D.P.H., Medical Officer of Health, Blackburn.
Certifying Surgeons under the Factory and Workshop Acts: WADE, A. R., L.M.S.S.A. (Highbridge, Somerset); WILLIAMS, R. T., M.B., B.S. Lond. (Llanfairfechan, Carnarvon); MCILRAITH, L.R.C.P., L.R.C.S. Edin., L.R.F.P.S.Glasg. (Friockheim, Forfar); MCLISTER, D., M.B., B.Ch.Belf. (Stillington, Durham); and LUNN, J. (Bruton, Somerset).

Vacancies.

For further information refer to the advertisement columns.

Albert Dock Hospital, Connaught-road, E.—H.S.'s at rate of £110.
Ashton-under-Lyne, District Infirmary.—H.S. at rate of £150.
Ayr County Hospital.—H.S. and Jun. H.S. at rate of £100 and £80 respectively.
Barnet, Wellhouse Hospital.—Asst. Res. M.O. £150.
Birmingham and Midland Hosp. for Dis. of Nervous System, Park-row.—Clin. Asst. for Out-patient Dept. at rate of £50.
Birmingham Asylums Committee.—Consulting S.
Birmingham, Queen's Hospital.—Third Phys. £50.
Bradford Royal Infirmary.—H.S. £150.
Bristol Royal Infirmary.—Hon Med. Reg.
Bristol, Southmead Hospital.—Res. Med. Supt. £650.
Burton-on-Trent Infirmary.—H.S. £150.
Cardiff, Welsh National School of Medicine.—Asst. Lecturer in Dept. of Physiology. £400.
City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.—Anæsthetist.
Derbyshire County Council.—M.O.H., &c. £1400.
Doncaster Royal Infirmary.—Hon. Ophth. S.
Dreadnought Hospital, Greenwich.—H.P. and H.S. Each at rate of £110.
Federated Malay States.—Research Studentship in Tropical Medicine. £700.
Freemasons Hospital and Nursing Home, 237, Fulham-road, S.W.—R.M.O. at rate of £250.
Guy's Hospital Dental School.—Dental Travelling Scholarship.
Halifax Royal Infirmary.—Third H.S. at rate of £150.
Hospital for Diseases of the Throat, Golden-square, W.—Hon. Surg. Reg.
Hospital for Epilepsy and Paralysis, Maida Vale, W.—R.M.O. and H.P. at rate of £150 and £100 respectively.
Hull, Victoria Hospital for Sick Children, Park-street.—Res. H.P. £80.
Inverness, Northern Infirmary.—Jun. M.O. £100.
Kingston-on-Thames, Kingston and District Hospital.—Second Asst. Res. M.O. at rate of £300.
Liverpool Open-air Hospital for Children, Leasowe, for Non-Pulmonary Tuberculosis.—Jun. M.O. £200.
London Homœopathic Hospital, Great Ormond-street, W.C.—Third Anæsthetist. £50.
London Hospital, E.—First Asst. to Surgical Firm. £400.
Manchester, Christie Hospital.—Cancer Research Worker. £500.
Manchester, St. Mary's Hospitals.—Two H.S.'s. Each at rate of £50.
Manchester University.—Lecturer in Morbid Anatomy and Histology. £500.
Metropolitan Asylums Board, Infectious Hospitals Service.—Asst. M.O.'s. £500.
Metropolitan Hospital, Kingsland-road, E.—S. for Dis. of Nose, Throat, and Ear. Also Hon. Anæsthetist.
Middlesex Hospital and Medical School, W.—Obstet. and Gynæcological Reg. £300. Also University Chair of Biochemistry. £800.
National Hospital for Dis. of the Heart, Westmoreland-street, W.—Res. M.O. at rate of £150. Also Out-patient M.O. at rate of £125.
National Hospital for the Paralysed and Epileptic, Queen-square, W.C.—Asst. Ophth. S.
Portsmouth, Royal Hospital.—Sen. H.S. at rate of £200.
Preston and County of Lancaster Royal Infirmary.—Third H.S. £150.
Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—R.M.O. £200. Also Two H.P.'s and Cas. H.S. Each at rate of £100.
Richmond, Surrey, Royal Hospital.—Asst. H.S. £100.
Royal Chest Hospital, City-road, E.C.—Phys.
St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—H.S. at rate of £75.
Sheffield Royal Hospital.—Hon. Radiologist.
South London Hospital for Women, South Side, Clapham Common, S.W.—H.P. and Three H.S.'s in each case at rate of £50.
Suva, Fiji.—Port M.O. and Bacteriologist, &c. £750.
Walsall General Hospital.—Hon. Pathologist. 50 guineas.
West Ham Union, Central Home, Union-road, Leytonstone, E.—Res. Asst. M.O. £441.
West London Hospital, Hammersmith-road, W.—H.P. and Two H.S.'s. Each at rate of £100.
West Riding County Council.—Dist. Tuberculosis O. £600.

Births, Marriages, and Deaths.

BIRTHS.

BALL.—On Feb. 21st, at Warwick-mansions, Pond-street, Hampstead, the wife of Norman Dyer Ball, M.B., of a son.
CONNAN.—At "Sannox," Cotsford-avenue, New Malden, on Feb. 23rd, to Annie Dorothy (née Mackintosh), wife of Dr. D. M. Connan—a daughter.
HARE.—On Feb. 22nd, at Earl Soham, Suffolk, the wife of W. Theodore Hare, M.C., M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

GARFIELD—ELMAN.—On Feb. 25th, Montagu Garfield, M.R.C.S., L.R.C.P., L.D.S. Eng., of Palmeira-mansions, Hove, to Marguerite Elman, M.R.C.S., L.R.C.P., of Amhurst-road, London, E.
HILL—GLAISYER.—On Feb. 18th, at Christ Church, Hampstead, Arthur Hilary Clifton Hill, M.R.C.S. Eng., L.R.C.P. Lond., to Ellen Phoebe, youngest daughter of Mr. and Mrs. Edmund Glaisyer, of Putney.

DEATHS.

DE WATTEVILLE.—On Feb. 24th, near Geneva, Armand de Watteville, M.D., late of Welbeck-street, W., in his 79th year.
GRAHAM BROWN.—On Feb. 28th, at Edinburgh, John James Graham Brown, M.D., F.R.C.P. Edin., aged 71.
HARDING.—On Feb. 25th, at Sydney-place, Bath, suddenly, Alfred William Harding, B.A., M.B., M.R.C.S. Eng., aged 78.
VINRACE.—On Feb 27th, at "Denehurst," Moseley, Birmingham, Emelin S. Vinrace, only daughter of the late John Vinrace, M.D.
WILLIAMS.—On Feb. 20th, at Pen-Bre, Bangor, Richard Williams, J.P., M.R.C.S., Ophthalmic Surgeon, late of Rodney-street, Liverpool.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

THE LATE MR. J. F. STEEDMAN.—John Francis Steedman, F.R.C.S. Eng., who died recently from heart failure while attending an International Rugby football match, was an old Bart.'s man who qualified M.R.C.S. Eng. in 1883, taking the F.R.C.S. two years later. He was born 70 years ago in Shropshire. Mr. Steedman had been in private practice in Streatham for nearly 30 years and was greatly esteemed by all who knew him in that district. He was keenly interested in local hospital and charitable work and for 20 years was hon. medical officer at the Magdalen Hospital, Dewstead-road. He assisted in the work of the Streatham Red Cross Hospital during the war. Mr. Steedman was an enthusiastic sportsman, playing cricket, golf, and lawn tennis, and to the end took a great interest in all games. He leaves a widow and five children.

Notes, Comments, and Abstracts.

THE OPERATIVE TREATMENT OF UTERINE DISPLACEMENTS.

BY ARTHUR E. GILES, M.D., B.Sc.LOND., F.R.C.S.ED.,
GYNÆCOLOGIST, PRINCE OF WALES'S HOSPITAL, TOTTENHAM; CONSULTING SURGEON, CHELSEA HOSPITAL FOR WOMEN.

UTERINE displacements fall naturally into two groups: (1) Backward displacements: Retroversion and retroflexion; (2) downward displacements: Prolapse and procidentia.

Backward Displacements of the Uterus.

Retroflexion is in some cases a matter of shape more than of position; it is indeed possible for the fundus to be sharply bent back over the cervix, while the uterine axis as a whole maintains almost its normal position. Such a retroflexion may be regarded as developmental, and is strictly analogous to acute anteflexion, which is a matter of conformation rather than one of position. In other cases, when the uterine tissues are lax and the axis of the uterus has become tilted backwards, retroflexion may occur as a secondary condition, when it may be regarded as an exaggerated form of retroversion. In speaking of retroversion in the following remarks the term will be used so as to include cases complicated by retroflexion.

Formerly the treatment of retroversion by pessaries was the rule; operative treatment was the exception. Now this is reversed. The increasing safety of abdominal operations has been the primary factor in the change; education of feminine public opinion has followed. No healthy and nice-minded woman likes either the idea of having a foreign body in her vagina or the necessity for frequently recurring examinations. It becomes as obvious to patients as it is well known to their doctors that pessaries have the effect of setting up or increasing unpleasant discharges; and it has become known to them, as it has long been to us, that the long-continued irritation of a pessary in the vagina is a possible cause of malignant disease. Many women have endured the wearing of pessaries, even for years, simply because they did not know that there was any other mode of treatment, and because, even with the attendant disadvantages of pessaries, they were at least more comfortable with one than without one. Once the more excellent way is shown to them, the great majority of women choose operation in preference to pessaries.

There is only one class of case of retroversion in which pessaries are even permissible, and that is when the uterus is freely mobile and there are no complications. When the uterus is adherent, the introduction of a pessary is not only futile, but harmful. Of course, it ought not to be possible for a pessary to be introduced in such a case, because the first and cardinal rule in the treatment of retroversion by a pessary is that *the displacement must be corrected before a pessary is put in.* Obviously, if this rule be followed, the fixation of the uterus cannot be overlooked, because in such a case the displacement cannot be corrected. It must be admitted that gynæcologists do have women coming to them wearing a pessary with an adherent retroversion, and wondering why they still feel discomfort; and the admission must be made sorrowfully, because the point is explicitly stated in text-books, and has repeatedly been emphasised in lectures both to students and to post-graduates. The fact that I have come across such cases recently makes me feel that it is still necessary that it should be stated afresh.

The other condition in which pessary treatment is definitely barred is when there is disease of the uterine appendages, or of the uterus itself. Here the accompanying disease is more important than the displacement, and should be treated, surgically if necessary, and the displacement can be dealt with at the same time.

Operative Treatment of Retroversion.—There are several ways of dealing surgically with a retroversion. It is not necessary to make more than a passing reference to the fantastic view that has been seriously propounded by some recognised teachers of gynæcology that retroversion can be cured by curetting. An examination of this view must at once convince the impartial observer of its absurdity. Nor need we consider seriously the operation of vaginofixation; it has no possible advantages over other procedures, and it has the manifest disadvantage that it leaves the uterus immobilised in a faulty position. Two types of operation are worthy of consideration: *Shortening of the round ligaments,* and suture of the uterus to the abdominal wall—an operation that is properly described as *hysteropexy.*

Shortening of the Round Ligaments.—Historical reviews refer to the extraperitoneal method of shortening the round ligaments devised independently by Alexander and by Adams, and known usually by their joint names as the *Alexander-Adams operation.* It served its purpose at the time, as a pioneer method; its drawbacks were so evident that it fell out of use and was replaced by better procedures. The present-day methods are intraperitoneal, and are founded on the operation devised by Gillian. His plan was to reflect the skin back for a short distance on each side of the median incision, pass a forceps through muscles, fascia, and peritoneum on either side, pick up the round ligament, draw it out through the hole made in the muscle and fascia, and suture a loop of it there. Others pass a purse-string suture along the course of the round ligament from where it enters the internal inguinal ring to its origin in the uterine fundus. When the two ends of the suture are drawn together and tied the round ligament is crumpled up in a close loop. A more particular modification of Gillian's operation is to strip back the skin as he does, but low down over the external inguinal rings. A curved forceps is then passed up the inguinal canal and brought out at the internal inguinal ring; the round ligament is seized and brought out through the inguinal canal. This method is theoretically very sound; but there is a definite risk of wounding the deep epigastric artery, and as a result of this accident troublesome hæmorrhage occurs.

Suture of the Uterus.—The idea of suturing the uterus to the abdominal wall is 30 years old. Yet there are few operations concerning which more confusion prevails at the present time than we find centred round the suturing of the uterus. The confusion lies in the terms *ventrofixation* and *ventrosuspension.*

Ventrofixation, as originally devised, was as follows: The uterine fundus was brought up and doubled forward; silk or silkworm-gut sutures were passed through the muscle, fascia, and peritoneum of one side, then through the *posterior* wall of the uterus, then out through the peritoneum, fascia, and muscle of the other side. When the sutures were tied the uterus lay with its posterior surface in contact with the abdominal wall. The advantage of the operation was that the results were permanent; the disadvantage was that if carried out in a woman of child-bearing age and she became pregnant, serious trouble was bound to occur.

Ventrosuspension.—In this operation the sutures were passed through the peritoneum only on either side, and through the anterior surface of the uterus. The advantage was that a subsequent pregnancy was not interfered with; the disadvantage was that the peritoneal attachment stretched so readily that a long thin band soon formed, allowing the uterus to fall back as badly as ever.

Neither of these operations is ever done to-day; neither has been done for many years past unless by operators who do not know the correct way to suture the uterus. The term ventrosuspension is very seldom heard. But ventrofixation is still spoken of to describe the very different operation that is done now. The consequence is that many people with imperfect knowledge of this subject—and it would appear that we must include in this category a number of quite eminent gynæcologists—use the term ventrofixation, which they know, in speaking of the modern operation, which they do not know, and proceed to condemn it wholeheartedly, saying that it is a most dangerous operation to perform in a woman of child-bearing age. The truth is that this observation would be entirely correct if it referred to the original operation, which is not performed, but it is entirely incorrect when applied to the modern operation. This operation I shall now describe.

Hysteropexy.—In view of the confusion entailed by the use of the words ventrofixation and ventrosuspension, I long ago decided to abandon both words, and to use the non-committal word *hysteropexy* to describe the modern operation. The principle of it is that the sutures are passed through the muscles and fascia, as in ventrofixation, whereby the stability of the attachment is secured. But in the uterus they are passed on the anterior surface, as low as possible above the bladder reflection, and all of them lower than the uterine fundus. The result of this is that in case of pregnancy the uterus is free to expand, and pregnancy and labour proceed normally. In saying this I am not speaking of what, theoretically, *should happen,* but of what, in practice, *has happened.* Among over 1200 hysteropexies which I have myself carried out, a considerable number were done in women of child-bearing age, either married at the time or who married subsequently. Inquiries into their later history have resulted in information concerning over a hundred cases in which pregnancy has occurred and labour has taken place as normally as in women who have not been operated upon. In the majority of cases information derived from the patients has been corroborated and supplemented by letters or verbal communications from the medical practitioners who have attended them in their confinements. Therefore, I can assert confidently that hysteropexy, properly carried out, is a safe and proper operation to perform on women of child-bearing age.

Hysteropexy versus *Shortening of the Round Ligaments.*—While I have performed hysteropexy many times, I have shortened the round ligaments in relatively few cases. It is a proper question that I should be asked why I prefer hysteropexy. The answer is that these are operations whose merits stand or fall by their results, and that in judging of results one cannot do otherwise than be guided by one's own experience. The two outstanding questions are: (1) What is the effect of the operation on pregnancy, and of pregnancy on the operation? (2) Are the results permanent as regards the correction of the displacement? With regard to hysteropexy, I have answered the first part of the first question, and the answer to the second part is that I have examined a large number of patients after the confinement and have found the uterus still attached to the abdominal wall. With regard to shortening of the round ligaments, I have no experience of cases of subsequent pregnancy; but certainly better results could not be obtained than have followed hysteropexy. With regard to the second question, it has been my experience to come across a number of cases operated upon by other surgeons, where the round ligaments had been shortened, and examination showed that the uterus had fallen back into a position of retroversion. A careful statistical investigation of cases examined after hysteropexy, often after many years, showed that the attachment remained good in about 98 per cent. I should much like to see carried out an investigation of the after-results of a large number of cases of shortening of the round ligaments; and if the results should prove to be better than those of hysteropexy, I would gladly follow the better method. At present I can come to no other conclusion than this—that hysteropexy, which is a simple and safe operation, is as safe as it is possible to be from the point of view of subsequent childbirth, and that it gives more permanently good results than does the operation for the shortening of the round ligaments.

Downward Displacements of the Uterus.

These include the various degrees of prolapse and procidentia of the uterus together with the frequently associated prolapse of the vaginal walls. No form of prolapse can be cured by pessary treatment. A considerable degree of comfort can be obtained by means of pessaries, but a woman who chooses a pessary in preference to operation will have to wear one for the rest of her life. The drawbacks of pessaries detailed in the remarks on retroversion remain the same when they are used for prolapse—the frequent examinations, the discharge, and the chronic irritation which in some cases may pave the way for malignant disease.

The secret of success in the operative treatment of prolapse is to leave no part of the prolapse untreated. For example, when a marked cystocele complicates the descent of the uterus, it is not sufficient to fix up the uterus; the cystocele would remain, and would be capable of causing as much discomfort as the prolapse of the uterus itself. In the same way, when the uterus is heavy and markedly prolapsed, it is not sufficient to repair the perineum and do an anterior colporrhaphy, for the heavy uterus will continue to press down and cause the typical "bearing-down" feeling. For a slight prolapse of a small uterus associated with a deficient perineum and a cystocele a perineorrhaphy and anterior colporrhaphy may suffice. If the uterus be heavy and hyperplasic, or much prolapsed, or both, I regard the suturing up of the uterus as essential. There is a doctrine, emanating chiefly from Manchester, to the effect that an abdominal operation should never be done for prolapse, and that the proper treatment is amputation of the cervix, an extensive anterior colporrhaphy and a thoroughgoing perineorrhaphy. My belief is that this doctrine is fundamentally unsound, and in practice most pernicious. The hyperplasia in these cases, for which the amputation of the cervix is ostensibly performed, is in part apparent more than real. When the uterus comes down, bringing down the vaginal walls with it, the cervix appears to be elongated, because the vaginal fornix is drawn down in a cone-like fashion simulating a long cervix. When the uterus is pushed up into place the true state of things is at once evident. Such a cervix certainly does not need to be amputated. Moreover, such hyperplasia as is present—and there is often some hyperplasia of the supra-vaginal portion of the cervix—is due to the prolapse itself, and when the uterus has been slung up to the abdominal wall the hyperplasia clears up.

But my objection to amputation of the cervix in these cases is not based only on the fact that it is unnecessary; a still more important objection is on the ground that it is harmful. It leaves a scarred and mutilated stump in the vagina, and with the accompanying thorough colporrhaphy there is a great deal of cicatricial tissue in and round the vaginal vault. I saw a case that had been treated in this way, and indeed it was a sorry sight. Scar-tissue alternated with raw patches. The patient was a still young woman anxious to have another baby, and the outlook seemed pretty hopeless. This mutilating treatment is done in order to avoid opening the abdomen and slinging up the uterus; I am certain that the woman is left in a far more normal condition with her cervix intact and the uterus attached to the abdominal wall, and in the latter case the chances of pregnancy and natural labour are not in the least degree impaired.

In many cases an old tear of the cervix is present, with that eversion of the mucous membrane commonly called "erosion," but more correctly described as "ectropion." It is good procedure to repair such a cervix by means of a trachelorrhaphy, and when the uterus is hyperplasic, or there is a history of menorrhagia or discharge, a curetting should precede the trachelorrhaphy. This is a very different matter from an amputation of the cervix. Repair leaves a cervix that is practically normal, and serviceable for child-bearing. When anterior colporrhaphy is required, the procedure will vary according to the degree of the vaginal prolapse. With a simple elongation of the anterior vaginal wall, it is sufficient to remove a diamond-shaped area and suture the cut edges so as to form a transverse seam. When the bladder protrudes markedly, a good method is to make a vertical incision and dissect two lateral flaps. The bladder is thus exposed, and with the help of a few light touches with the scalpel it can be separated from the front of the cervix and pushed up with a swab. When it is sufficiently out of the way, the bases of the flaps are brought together with two or three mattress sutures; the redundant portion of the flaps is cut off, and their edges brought together with a continuous catgut suture.

When all that is necessary in the way of vaginal and cervical repair has been done, the abdomen is opened and the uterus is sutured to the abdominal wall, as previously described. The advantage of hysteropexy over shortening of the round ligaments, which I regard as definite in cases of retroversion, is even more pronounced in dealing with prolapse and procidentia. The round-ligament operation will hardly ever hold up permanently a heavy prolapsed uterus. Sometimes the case may be complicated by the presence of a small ovarian cyst or some fibroids, and ovariotomy or a myomectomy can then be carried out before the uterus is sutured. Sometimes a patient with procidentia is sent to us with the suggestion that a hysterectomy should be done. To accept the suggestion would be a very great mistake. If such a uterus be removed, the sequel is almost always a very troublesome recurrence of prolapse of the vaginal walls, which is apt to be most difficult to deal with. It is much better to retain and fix up the uterus, and so use it to pull up and support the vaginal walls. So important do I consider this point that if I have to deal with a prolapsed uterus with fibroids, the fact of the prolapse would induce me to do a myomectomy even in cases where a hysterectomy would otherwise be certainly indicated.

It will be seen that in many cases several procedures are required when dealing with downward displacements of the uterus. We may summarise them as follows:—Hysteropexy and perineorrhaphy, when the prolapse is associated with a deficient perineum. Hysteropexy and anterior colporrhaphy, when the perineum is good, but a cystocele is present. Hysteropexy, anterior colporrhaphy and colpoperineorrhaphy, when cystocele and rectocele and a deficient perineum complicate the prolapse. Hysteropexy, curetting, and trachelorrhaphy, when the vaginal walls are good, but the cervix is torn. Hysteropexy, curetting, trachelorrhaphy, anterior colporrhaphy, and perineorrhaphy, when the vaginal walls and cervix also want attending to. This whole operation can be completed in about an hour when no time is wasted. Any or all of these procedures may be carried out without hesitation in a woman of child-bearing age with the assurance that pregnancy and labour will not be prejudiced thereby.

AN INDISPENSABLE YEAR BOOK.

"Burdett's Hospitals and Charities, 1925" (London: The Scientific Press, Ltd. Pp. 1019. 17*s.* 6*d.*), has reached us. This year book, founded 35 years ago by the late Sir Henry Burdett, is too well known to need detailed description. It is sufficient to say that it gives an account of over 8000 institutions and serves as an exhaustive record of current charitable work. As a guide to British and colonial hospitals and asylums, medical schools and colleges, nursing and convalescent institutions, sanatoria, dispensaries, and benevolent institutions it is indispensable; the index is well compiled and comprehensive. Among new features may be noted a section in which seamen's hospitals throughout the world are grouped together, and a new sub-section, which contains a list of the London, provincial, and Scottish settlements for social work. The directory of institutions overseas has been enlarged, Africa taking a good share of the newly allotted space.